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III WORKING GROUP ON IFRS IMPACT AND CBSO DATABASES

Document nº 6

Stock taking exercise on group´s structure information available in Europe: some extended issues

1. **Algorithm used to create trees´ structure**
2. **Identification of foreign filliates**

European Committee of Central Balance Sheet Data Offices (ECCBSO)

CONTENTS

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I. INTRODUCTION. SCOPE OF THE EXERCISE

The document "**Stock taking exercise on group´s structure information available in Europe"[1],** published by IIIWG in October 2012, collected information about the current available data on group´s structure in the institutions represented in the group, summarizing the coincidences and differences found in the content and managing of the databases available in our central banks. Two particular issues needed a more deep analysis, in order to complete the overview given in the formerly named document: firstly, how the tree´s structure of relations among parents companies and filliates is created from the information available in the databases, and secondly, how the national databases are dealing with the problem of identification of foreign filliates.

The main findings of this research are as follows:

About the algorithm used by National Central Banks to create the group´s tree:

1. Not all the countries have tools to create trees of group´s relations, among parents and filliates, but all of them use the tree´s structure of the group.
2. In all cases, the information of the pair ID filliate / ID parent, is available. Even in some countries there is information on the ID of the ultimate parent company.
3. The trees are built from a collection of different data sources, representing in some cases conflicts of contradictions
4. When there is a tool to create a tree´s structure, in most of the cases the approach taken is top-down
5. In some cases there exist more than one possible algorithm, as for example in France, with a different approach to trees created for statistics, refered to the risk assessment approach tree
6. Some countries have the possibility to access to EGR, as they belong to statistics directorate; nevertheless the connection between EGR data and the national not always is possible due to the strong confidential conditions applied by Eurostat. Some countries have also direct sources of information on the domain, like Portugal, with its International Investment Position survey (IIP)
7. We hope that in future the LEI project (Legal Entity Identifier) will help the creation and maintenance of these trees.

About the foreign companies identificator:

1. Somer countries create automatically the identificator (AT, BE, DE, FR, IT, PT and SP),
2. IN some cases there are several identifiers, depending in the need of use (Banking Supervision, Credit assesstment, Statistics, Central Credit Register)
3. Portugal has developed an algorithm to provide a unique identificator, using a text mining approach

[1] Those interested can find the 2012 version of the document in www.eccbso.org

II. ALGORITHM USED TO CREATE TREES STRUCTURE

Oesterreichische Nationalbank

All sources are administered in / part of the master database of OeNB which is called “Observ”.

Group structure according commercial register

This database is based on the Austrian commercial register und thus comprises all registered Austrian companies. Depending on the legal form of the company all national participations and equity holders are available (private limited companies, partnerships, registered sole proprietorship; public limited companies only when it is sole shareholder) as well as direct foreign holders.

On basis of this official information it is possible to show the group structur in both directions (up and down). But the focus is limited as:

- Participations abroad cannot be reflected (as not part of national commercial register)
- Shareholders of public limited companies are not covered (except there is only one 100% shareholder).

Example for group tree, search after participations

IdentNr	Land	Function	calculated share	share[%]	Name
6496687	AT	proprietor	100,00	100,00	Wienerberger Anteilsverwaltung GmbH
6496679	AT	proprietor	100,00	100,00	Wienerberger Industriebeteiligungsverwaltung GmbH
194255	AT	proprietor	100,00	100,00	Wienerberger Finanz Service GmbH
1659448	AT	proprietor	100,00	0,00	Wienerberger Ziegelindustrie GmbH
307076	AT	unlimited partner	100,00	100,00	Salzburger Ziegelwerk Gesellschaft m.b.H. & Co.
6665152	AT	proprietor	100,00	100,00	Wienerberger West European Holding GmbH
6665179	AT	proprietor	100,00	100,00	Wienerberger ZZ Holding GmbH
8194890	AT	proprietor	100,00	100,00	Wienerberger Gamma Asset Management GmbH
1356780	AT	proprietor	50,10	50,10	PIPELIFE International GmbH
1351451	AT	proprietor	50,10	100,00	PIPELIFE Austria GmbH
1993062	AT	unlimited partner	50,10	100,00	PIPELIFE Austria GmbH & Co KG
1993062	AT	limited partner	50,10	0,00	PIPELIFE Austria GmbH & Co KG
4375670	AT	proprietor	50,10	100,00	Pipelife Asset Management GmbH
8194904	AT	proprietor	100,00	100,00	Dryfix GmbH
8606447	AT	proprietor	100,00	100,00	Tondach Holding GmbH
3987507	AT	proprietor	100,00	100,00	Wienerberger Dach Beteiligungs GmbH
1663119	AT	proprietor	100,00	100,00	WIBRA Tondachziegel Beteiligungs-GmbH.

Example for group tree, search after proprietors

IdentNr	Land	Function	calculated share[%]	share[%]	Name
4375670	AT		100,00		Pipelife Asset Management GmbH
1356780	AT	proprietor	100,00	100,00	PIPELIFE International GmbH
6712878	NL	proprietor	49,90	49,90	Wienerberger Finance Service B.V.
8194890	AT	proprietor	50,10	50,10	Wienerberger Gamma Asset Management GmbH
6496679	AT	proprietor	50,10	100,00	Wienerberger Industriebeteiligungsverwaltung GmbH
6496687	AT	proprietor	50,10	100,00	Wienerberger Anteilsverwaltung GmbH
46434	AT	proprietor	50,10	100,00	Wienerberger AG

Group struture according financial statements

Moreover OeNB implemented in 3/2012 a broader scope of group structure within Observ for those Austrian groups which are reporting under IFRS. For those groups the following information is recorded manually: all subsidiaries which are in the full scope of consolidation are linked to the listed parent company, including also the subsidiaries abroad. Furthermore the next higher level of consolidation (group statement of parent) and the ultimate group is recorded (national or international). Thus this group tree exceeds the information of the one based on commercial register. Disadvantage: whereas the group structure on commercial

register is updated on a daily bases, the group tree on financial statements is only updated once a year (manually based on the current financial statement report of the parent company).

Group structure according banks report

Another source for group structure comes directly from the banks which are obliged to report group information from companies (debtors) to OeNB. They have to report the whole group tree (both directions). This information is plausi-checked by OeNB for the national part.
To summarize there are three types of group structures administered in the masterdatabase of OeNB. As they have different scopes they are indeed partly overlapping but not covering the same information.

Banque Nationale de Belgique

The only source of information on investments in related parties, at the National Bank of Belgium, is the database of the Central Balance Sheet Office. This database comprises all information on investments in related parties that is included in the notes to the annual financial statements. This means that group information is only collected top-down, not bottom-up. Every record in the database represents a parent-filiate relationship as every record contains the company number of a parent and the company number of a filiate. Other information included comprises the percentage of ownership directly held and the percentage of ownership indirectly held. No tree structures are built based on these data.

Banque de France

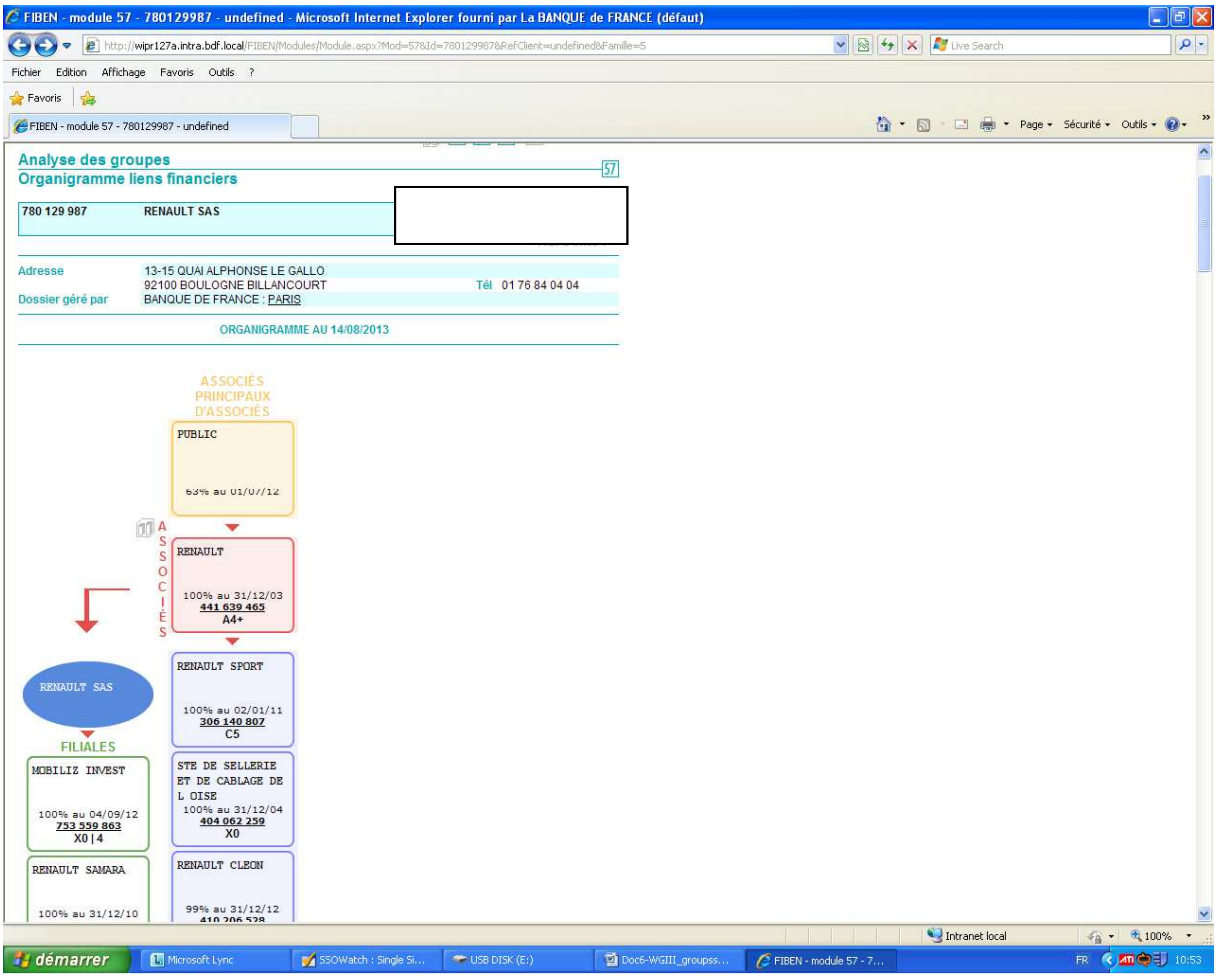
Banque de France has implemented an internal algorithm to calculate the group's structure of non financial companies, for two purposes:

- Risk assessment process;
- Statistical decree of December 2008, which creates a new statistical unit based on the combination of several legal units.

1 - For risk assessment purposes, financial links are used to get an overview of the group:

- Is the entity consolidated by another entity?
- Identification of the direct parent company;
- Identification of the highest group level;

This is an example of the entity "Renault SAS", consolidated by its parent company "Renault SA".



2 – For statistical purposes, Banque de France has created another algorithm using the financial links information; only participations above 50 % are used.

This algorithm allows to define a proxy of the new statistical unit "enterprise", defined as the combination of several legal units and to find out:

- Independent units;
- Subsidiaries of an enterprise with a resident ultimate parent company;
- Subsidiaries of an enterprise with a non resident ultimate parent company.

The financial accounts of the legal units composing the same enterprise are aggregated to form the new statistical unit used for economic analysis.
Some treatments are implemented to neutralize the double accounting effects, as far as possible, on Equity, Financial debt, Financial assets, Dividends received or paid and Interest received or paid.

Deutsche Bundesbank

In Bundesbank group structure is being reflected within credit assessment process.
Currently a group overview is implemented in a system called "JALYS" which is used for assessment of national GAAP statements.

For each company following information is collected:

- Is entity a group or sub-group? (yes/no)
- Identification number of next higher group level
- Identification number of highest group level

- Identification number of parent of group (next level)

With this information a group overview can be „build“ within the system and all companies belonging to one group can be displayed.

In Bundesbank master data is only collected of group companies that are 100 % owned by a parent or belong to this group from an economic perspective

As from 2014 on Bundesbank will assess all statements (national GAAP and IFRS) with the new system CoCAS. Therefore within this application a group view will be implemented.
The used approach will be different as all information about the group will be collected within the master data of the head of the group.

For each group following information will be collected:
- Identification number of parent of group (highest level)
- Identification number of all subgroups

Advantage of the group view within CoCAS will be, that the group structure can be updated based on the group statement assessed. And a connection between countries can be made, as long as the relevant master data is available within CoCAS.

Bank of Italy/ Cerved group

Bank of Italy
Bank of Italy has not an internal algorithm to calculate the group's structure of non financial companies, because it isn't directly involved in the producing of FATS (Foreign Affiliates Trades Statistics) that are calculated by Italian Statistical Institution (ISTAT). Bank of Italy only manages the database about group structure of financial companies for supervisory purpose, but this database is compiled directly by banks that are obliged by law.

About the system used by Italian statistical institution (ISTAT) the general framework is based on collecting raw data from different data sources: chamber of commerce (limit: about foreign ownership, only direct parent company is reported) , stock market supervisory authority (only for listed companies), mercantile register and CONSOC database (only for public administration companies). Only the data coming from stock market supervisory authority show the entire control tree including the ultimate foreign parent company, instead data coming from chamber of commerce and CONSOC database report only the direct foreign parent company. Summarizing, only using the stock market supervisory authority allow us to uncover the ultimate parent company. About the companies controlled is ever possible to know all of them using the data available from the mercantile register.

Cerved Group

Cerved Group manages two different databases:

Cebi-gruppi: the process is completely manual and the target is to monitor the main 500 Italian groups, with national or foreign ultimate parent company, that is the top level of the group. The sources of information are:

- Italian financial statements: consolidated, individual, quarterly, annual
- Foreign annual report
- Websites, news and other non confidential sources

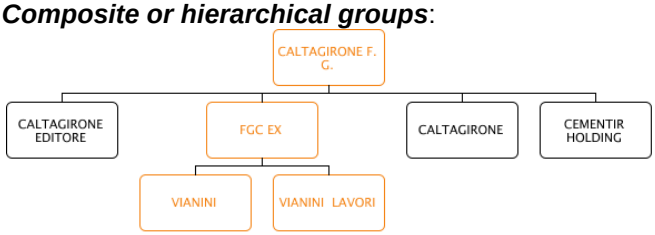
Gruppi italiani: the process is completely automatic and the target is to create relationships for all national groups, using:

- Italian annual financial statements: consolidated and individual
- Shareholders official Italian database

The algorithm produces the trees of the resident groups (holdings + sub-holdings) with all affiliates with participation above 50%. The information taking in account derived from the list of participations included in financial statements (or perimeter of consolidation) joined with the list of Shareholders. The two databases are matched by national fiscal code.

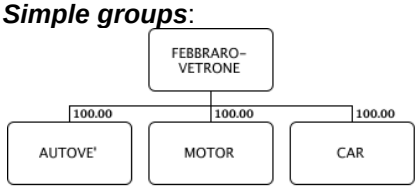
Two different kinds of groups are managed:

Composite or hierarchical groups:



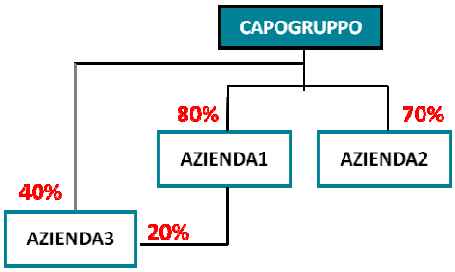
Identified by two or more holding companies included in a pyramidal structure with hierarchical organization.

Simple groups:



Flat structure, identified by one holding company.

In both cases are included all the companies that, directly or indirectly, are “investments”: the control is greater than 50% of voting or dominant (by agreements and others contracts)..



Bank of Greece

At the moment, the Bank of Greece does not have any database with groups of companies.

Banco de Portugal

Since 2010 accounting year data, CBSO annual database contains information about group structure as annual report ask directly which are direct parent company, ultimate parent company and direct and indirect relations. CBSO annual data is provided by legal deposit of accounts (Ministry of Justice) and shared with NSI which will use this information to contribute to EGR. As annual report is filled in by potentially all non financial companies it will be possible to reach the ultimate national parent company if a searching criteria is implemented.

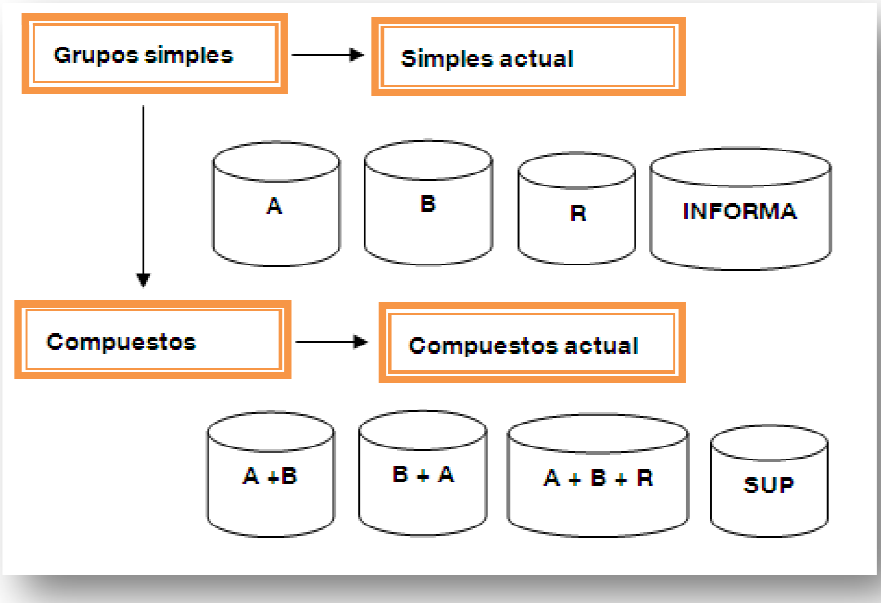
On the other hand, International Investment Position Survey (ISII) is also asking, since 2010 accounting year data, for all direct voting rights between entities in order to have a clear picture of the group and to precisely define the scope of foreign direct investment relations. ISII also asks directly for UCI and if searching criteria is implemented is possible to know all about group structure including ultimate national parent, direct parent and affiliates.

To sum up, until now Banco de Portugal hasn't implemented any kind of software to obtain a group tree structure. This information has been allowing us to understand relations between companies belonging to the same group for quality checking purposes.

Banco de España

a Generation of different kind of groups.

The new system and database "Grupos empresariales" available at Banco de España CBSO allows the creation of "tree structures" of the non financial corporations that belong to a Group, taking into account several options using the different data sources. This document describes the differente alternatives used at the moment:



1 Simple group for a year:

Simple relations provided by a source in an exercise: CBA, CBB, CBR and INFORMA.

2 Composed group for a year:

Relations provided by multiple sources, including priorities, for a year: A + B, B + A, A + B + R and SUPERVISION

3 Current Simple Group:

Generated with the most updated information of the same source.

4 Current composed Group:

Generated with the most updated information from the combination of various sources.

b Simple group for a year.

1 Rules for: CBA, CBB.

The company reports a direct and an indirect relation. Direct relation implies a hierarchical relation between enterprises in one level. Indirect relation implies a hierarchical relation between enterprises in one or several levels.

The set of information provided by all the questionnaires allows to generate consolidated groups with a hierarchical structure.

For the generation of simple groups CBA and CBB for a year are taken into account all directs and indirects relations of that source in this exercise:

Example:
'A' company states that its direct dominant is 'B' and their last dominant is 'C'. Hierarchical relationships are as follows:

FTE	EJER	TIPO EMP	Relation	Relation
CBA	2011	INDIRECTA	B	C
CBA	2011	DIRECTA	A	B

Step 1: Select a single relation

Sort all the relations sent by companies.
Select a unique relation.
If any relation is repeated (among the same companies), the following rules apply:

- If one of the relations is direct then select this relation.
- If there is no direct relation, select the relation with more indirect percentage.
- If there is more than one relation with the same percentage select randomly one.

Step 2: Companies with direct and indirect relations

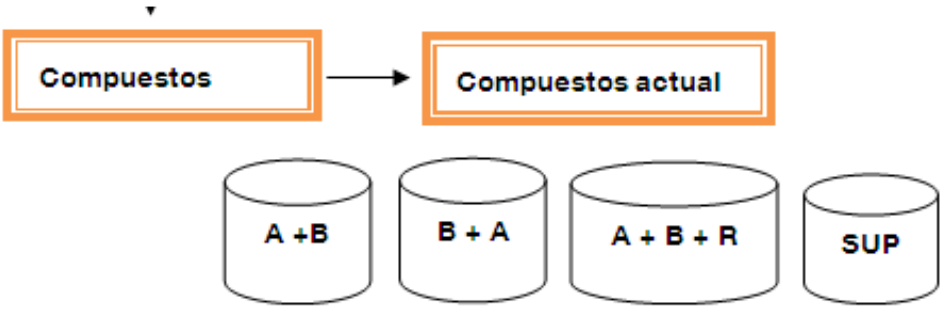
If there are direct and indirect relations for the same company, direct one is selected.

Step 3: companies with several indirect relations are sent to be checked for analysing possible inconsistencies in groups (companies with more than one direct parent, joint ventures and possible circular references).

c **Composed group for a year.**

A composed group consists of existing relations in various sources for a given exercise. These sources have a certain priority that can be different for each composite group.

1 Composed groups for a year, sources and priorities.



Priorities

	CBA-CBB	CBB-CBA	CBA-CBB-CBR
CBA	1	2	1
CBB	2	1	2
CBR	-	-	3

Rules are the same for the three groups.

Step 1: Select simple sources of the same year.
Select for all sources, all the relations used for creating all the simple groups.

Step 2: Select a single relation.

Sort a the relations among the set of selected relations in the previous step.
If there is just one relation, then select that relation.
If there is more than one relation to be selected then analyze:

- If there are relations (between the same companies) of various kinds, direct and indirect, we take only the direct relations and in the case of having more than one, then priority between sources applies.
- If all relations are the same type, direct or indirect, applies the priority of sources.

Step 3: Companies with direct and indirect relations

If there are direct and indirect relations for the same company, direct one is selected.

Step 4:

If for a company there are several direct links applies the hierarchy of sources

Step 5:

If for a company there are several indirect relations goes to quality check for possible inconsistencies: companies with more than one parent, joint ventures and possible circular references

III. FOREIGN ENTITIES IDENTIFIER

Oesterreichische Nationalbank

Foreign entities are identified in OeNB-database by an automatically generated internal identification number.

Banque Nationale de Belgique

Investments in foreign filiates are also included in the CBSO database. They receive an automatically generated internal identification number of (currently) six digits.

Banque de France

Foreign entities are identified in the Banque de France database by an automatically generated internal identification number, **if they get credits reported in the Central credit register. The identification number is similar to the resident entities (nine digits), but it's not an official identification.**

Deutsche Bundesbank

Due to a G20 initiative, there is a global project to implement a "Legal Entity Identifier". This system is not implemented yet in Germany, and its focus is mainly on financial entities. Therefore it is not sure if non-financial corporations will broadly use this identifier.

In Germany a single company identifier is not available. Therefore in Bundesbank one company available in different sources can have different identifiers.

Foreign Company Identifiers within credit assessment applications:
Within the credit assessment application for national GAAP national and foreign companies receive a "german" identifier used within the credit assessment application. This will always be a 6 digit number.

As CoCAS, credit assessment application for IFRS, can be used by different countries, this application is able to work with different identifiers. Each central bank using CoCAS is responsible for the assignment of its identifier. Only the alphanumeric code (max. 20 digits) has to start by the respective two digits ISO code (e.g. DE611475 Deutsche Lufthansa, AT2615 Austrian Airlines AG or ESA28023430 ENDESA, S.A.).

Foreign Company Identifier in Credit Register
For banking supervision reasons, german banks have to report quarterly on companies they have given loans to. These companies, independent from the country they are located at, also receive a "german" identifier. But as this information will be exchanged with other national credit registers, foreign company identifiers can also be linked to this german company identifier. This means, a german company will have a German credit register identifier but also an Austrian or a French identifier.

Bank of Italy/ Cerved group

Foreign entities are identified in Cerved Group databases by an automatically generated internal identification number.

Bank of Greece

At the moment, the Bank of Greece does not have any database with groups of companies.

Banco de Portugal

Foreign entities identification code is asked in two formats: annual report and International Investment Position Survey. In both formats, this field is not compulsory, but entity name and country of residence are compulsory. Different situations can occur, like missing, incomplete or incorrect data filling of a non-resident unique identification code.

In order to overcome this drawback of the raw data, Banco de Portugal have been developing an algorithm that aims to achieve an unequivocal identification of non-resident entities for statistical purposes and therefore build and maintain a relationship database between resident and non-resident entities and, finally, a group structure database.

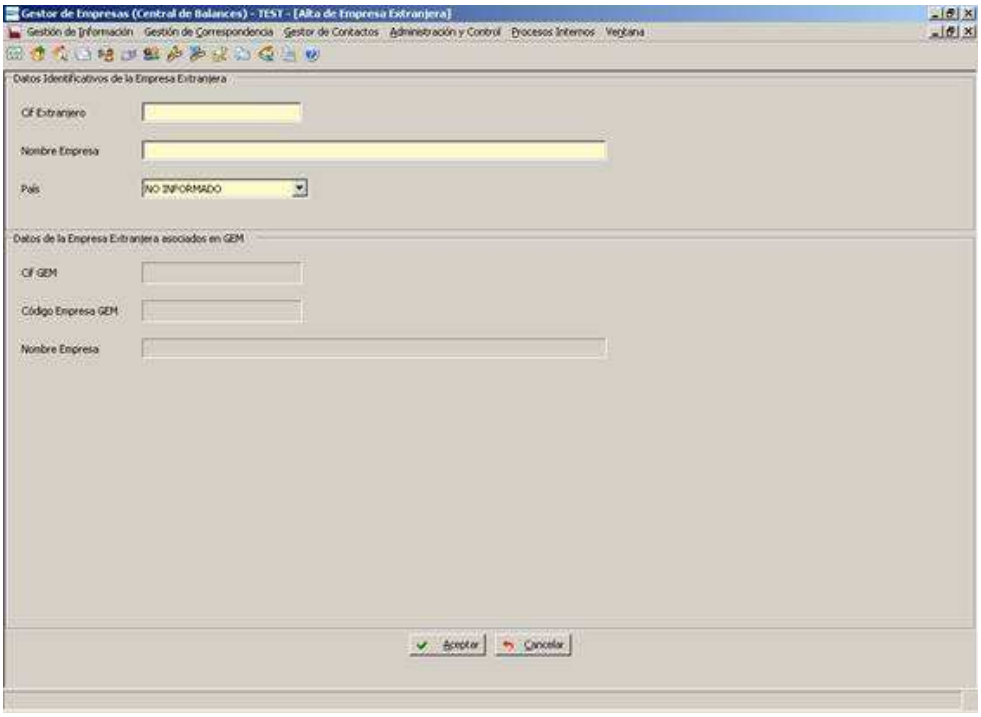
The algorithm consists in a text mining which seeks to reduce, to a unique value, the set of variations that a company name can assume when reported in both data sources and, for each source, in each reporting period. After removing from each company name all the non-alphabetic characters, such as accents and tabs, standardizing its formatting with lower case letters and concatenating with country of residence, the algorithm compares the chain of characters thus obtained and evaluates which of them are equal. The equal ones are considered to be representing the same entity. The record that is chosen to integrate the foreign entities database will be the one that contains more qualitatively relevant data. For example, for two records that share the same company name string of characters, it will be chosen the one record that has data for the national unique identification code, even though we do not know if it is correct. To this record is assigned a unique internal registration number (IDBP).

In order to streamline this algorithm in next periods, an intermediate database, called synonyms database, is used. This database contains all the values for the company name that have been already reported to Banco de Portugal for both sources, periods and the corresponding unique internal registration number.

Banco de España

Banco de España currently uses foreign companies identifiers in two different departments. This note summarizes the systems employed in both; there is a project to make connections among them, waiting also for the future developments on LEI (Legal Entity Identifier global project).

<u>Foreign Company Identifier, in Central Balance Sheet Data Office</u>
The special feature of these kind of companies is the simulation of a Spanish Cif associated with a Foreign Cif. CBSO will always use this simulation to work with the company. The original company Cif won't be removed but always be available in the Companies Maintenance functionality, specifically on the tab labeled "Additional Data".



As we can see in the picture above, the screen is divided into two distinct parts:

1 Foreign Company Information.

In this part we define the main properties of this type of company which are:

- Foreign Cif: The original company Cif. Depending on the original country we can have a different cif format, for that reason an association is made between the original Cif company and one that is created in the GEM ("Gestor de Empresas", that is, the General Identification Data management system) application for the maintenance of the company.

- Company Name: The corporate name of the company.

Country of Origin: Country of origin of the company.

2 Company information generated in GEM

In this part of the functionality we have the information to be used in the GEM application of the foreign company:

- Cif GEM: is the cif generated by gem associated with the original one. We have taken a specific format for this type of CIF consisting of:

The legal form of Cif is X.
The first three digits are (999).
The type of Cif will be the extension "EXT".
In this way we can clearly identify a foreign Cif.

- GEM Company Code: in the internal code used by GEM. This indicator has no difference with other Spanish companies codes.

- Company Name: The corporate name of the company.

The remaining information needed to enlist a company will have the default values, always is

possible to modify through the functionality "Companies Maintenance ". This information can also be modified through consolidated questionnaires.
When the questionnaire arrives in successive year, if the original foreign CIF matches, is associated with the same Spanish cif if not, a new one is assigned. If further processes or reviews shows that one foreign company has two different Spanish cif, we correct it.

Foreign Company Identification in Central Credit Register

Nonresident coding was born as a service to the CCR, because they collects information on individual level. This code try to assure that a person/company is always declared with the same code by the commercial banks that send their data to CCR, regardless the entity that declares it. Subsequently, it was decided to use these same codes to identify in any other statements, for example, shareholders, details of the securities portfolio.
Other European central banks also use this coding system for its CCR.
When a financial entity needs an identification code, they have to request it to CCR. The normal route for data transmission is electronic, but can also be requested by email when the number of applications is very small.
In the application, entities have to give a minimum identification data: the name of the non-resident and the country of residence.
The code has 11 positions:

- The first two are the ISO country code of residence.
- The third position can be 1 for individuals, or 0 for companies
- The 7 following are a sequential number assigned to each person to be encoded, regardless of country of residence.
- The last position is a check number.

A branch that is set in a different country has its own code.
ING BANK NV (company set in Netherlands) code: NL000200809
ING BANK NV (London branch) code: GB001285608

Document Management

Document name

Integrating reporting
This document summarizes the information available on groups´ structure

Release

Doc6 - WGIII_groupsstructure_2013_F
Date: 27/09/2013

Revision History

Each distributed document forms a "final version".
List of successive "final versions"

Revision version	Revision date	Summary of Changes
Doc6-WGIII_groupsstructure_2013_D1	26/06/2013	First version of the document
Doc6-WGIII_groupsstructure_2013_D2	06/09/2013	Second version of the document, after contributions received
Doc6-WGIII_groupsstructure_2013_D3	24/09/2013	Third version of the document, after London meeting
Doc6-WGIII_groupsstructure_2013_F	27/09/2013	Final version of the document, approved by the IIIWG

Distribution

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Version	Date of issue	Name
Doc6-WGIII_groupsstructure_2013_D1	26/06/2013	Members of the III WG
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	Name	Date	Name	Date	Date
Austria	Sabine Wukovits	12/08/2013	Sabine Wukovits	26/09/2013	26/09/2013
Belgium	Saskia Vennix	11/07/2013	Saskia Vennix	30/09/2013	30/09/2013
France	Jean-Luc Cayssials Claire MANGIN	22/08/2013	Claire Mangin Jean-Luc Cayssials	27/09/2013	27/09/2013
Germany	Ulrike Pfeiffer	22/07/2013	Matthias Lörch Martina Hemsath Ulrike Pfeiffer	26/09/2013	26/09/2013
Greece	Olga Lymperpoulou	05/09/2013	Olga Lymperopoulou	26/09/2013	26/09/2013
Italy	Vincenzo Favale Riccardo Renzi	20/09/2013	Vincenzo Favale Riccardo Renzi	30/09/2013	30/09/2013
Portugal	Ana Bárbara Pinto	14/08/2013	Ana Bárbara Pinto	26/09/2013	26/09/2013
Spain	Manuel Ortega Pilar Saura	24/09/2013	Manuel Ortega Pilar Saura	26/09/2013	26/09/2013