

<p>21th Wiesbaden City Group – International Roundtable on Business Survey Frames</p>
<p style="text-align: right;">Paris – 24 – 27 November 2008</p> <p style="text-align: center;">Session N° 6c –Measurements of Multinationals and Enterprise Groups</p> <p style="text-align: right;">Morganti E. – ISTAT</p>
<p style="text-align: center;">Integration of Register’s and Surveys’ data on MNEs</p>

Introduction

The measurement of the activity of MNEs has become a central issue for the European Statistical System. During the last year, with the entry into force of the new Business Register Regulation 177/2008, the discussion on how to implement it has had an acceleration. In the forthcoming months the Commission Regulation for the exchange of data between Eurostat and National Statistical Registers of Member States for the first time will allow the integration of micro data at European level. At that time the creation of an EuroGroup Registers will be a reality and in the next few years a common tool for sampling data and selecting coherent target populations for surveys on MNEs will be available.

With the EuroGroup Register for the first time, more than 30 different sources will be integrated in order to build up a complex structure of information. It is an experiment without precedents, also because European National Registers are themselves the result of integration of different sources, so the kind of information compared will be implicitly even larger.

The use of administrative sources and their integration for statistical purposes has been analysed and discussed for almost a decade in the Roundtable. The main issues are well identified, such as the comparison and treatment of differences in concepts and definitions, the translation from administrative units into statistical units and related characteristics, the reconciliation of different time stamping, and so on. In this context it has to be recognised that process for creating enterprise groups brings an additional complexity, due to the fact that integration is not only about units but also about relationships among units and all methodological issues must be resolved at both levels. Also the statistical unit ‘enterprise group’ has an additional peculiarity that makes difficult its treatment: it is the sole statistical unit in the Statistical System spreading above different economic territories, this means that units resident in different countries are subject to different legislations and report different kinds of administrative information to the national authority. Even though European laws provide a common framework of principles, national legislation can develop and apply them differently, so that the informative content of some administrative acts, responding to common objectives in all European countries, can be very different in practise.

In Italy the Enterprise Groups Register is build up from three main administrative sources and one statistical one. This paper will describe the advantages and limitations of the administrative sources¹ and then it will focus on the integration of the statistical source, the survey aimed at collecting information on foreign affiliates. This part of the process poses different and new issues, that can be generalised to analyse and understand differences and possible inconcistencies between the Register and one of the main user of it, i.e. the producers of statistics on foreign affiliates.

Pointing out such areas of possible inconcistencies can be a starting point for reflecting about the difficulties that the EuroGroup Register will have to face. A clear evaluation of the expectations of the users, with respect to their needs, as well as a clear communication plan in order to explain how far the EGR can be used as a tool for analysis or as a frame for sampling only, will be needed. Quality reports about information contained in the EuroGroup Register, at its different stages of development, will help to understand users

¹ See E. MORGANTI – A. PALLANTE – F. TULLI (2007) for the entire process description.

how differences in concepts, definitions and operational criteria can affect its immediate application in the production process, and how far they can be faced and treated in the integration process.

The method of integration among administrative sources

The Italian BR on EG reconstructs the Enterprise Groups defined as *“an association of enterprises bound together by legal and/or financial links (...). A group of enterprises can have more than one decision-making centre, especially for policy on production, sales and profits. It may centralise certain aspects of financial management and taxation. It constitutes an economic entity which is empowered to make choices, particularly concerning the unit it comprises”* by Council Regulation (EEC) N° 696/93. It is based on concepts and definitions coherent with European Regulation 177/2008 and follows all operational criteria defined by the Recommendation Manual on Business Registers.

The Register is build up annually, integrating three different administrative sources:

- I. The archive of all shareholders of non listed companies (Chamber of commerce)
- II. The archive of all shareholders of listed companies (Stock Exchange)
- III. Consolidated Accounts

The three sources provide complementary coverage of incorporated legal units that could be part of a group and even though the method of integration is complex and articulated it benefits from some favourably pre-conditions:

- A. Each source collects information about shareholders or control relationships on the basis of a legal provision². The legal purpose is the transparency in the structure of ownership and control relationships for all incorporated companies. This means that the kind of information collected is comparable, regardless the source collecting it.
- B. The timing of updating of the sources is coherent, since in all sources information are updated annually, having as reference year the accounting year. In Italy this corresponds with the calendar year, with some exceptions for the financial sector only.
- C. All the three sources contain a common identification code for all resident units, i.e. the fiscal code, that is used as primary key, and the linking process is greatly facilitated. Only for non resident legal units it is necessary to adopt a procedure based on exact matching of the denomination. For this subset of unit we estimate an over coverage error of non resident legal units in the Register.

The informative content of each source, that is specific to it, can be reorganised in order to give the same elementary information, that is pairs of relationships between legal units and one or more variables (qualitative and quantitative) representing the kind of relationships (capital shareholdings and/or control). Such elementary information is then treated in order to reconstruct the direct or indirect chains of control and at the end the enterprise groups³.

The data model of Enterprise Groups requires that each legal unit can control one or more legal units but can be controlled only by one unit. Therefore the final structure of the group will be a closed set of legal units

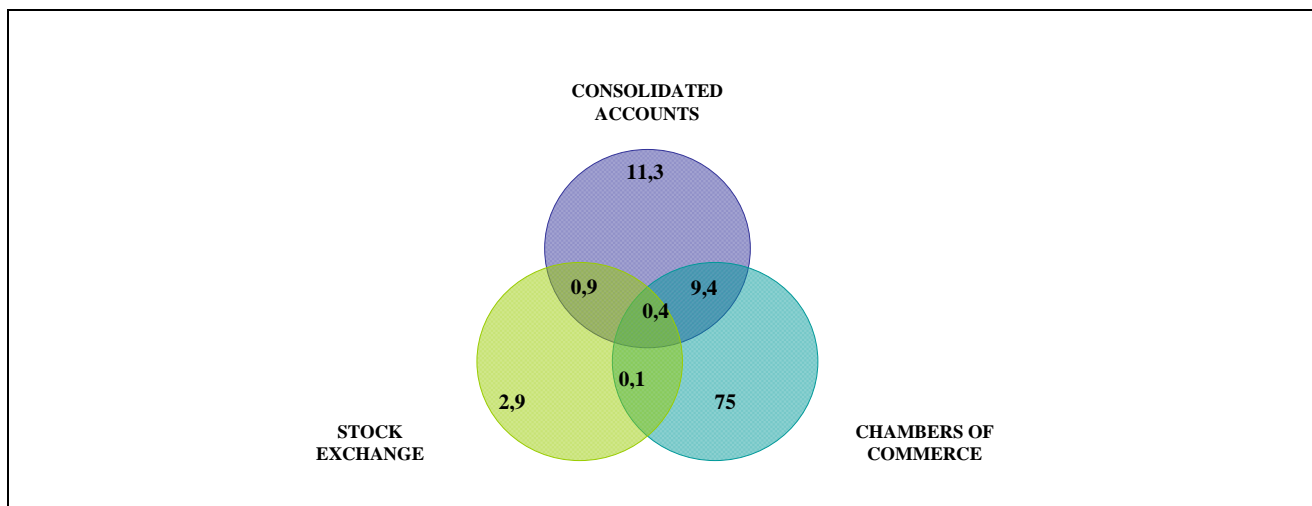
² The Italian law n° 310 of 1993 obliges all non-listed companies to declare the list of all their shareholders to the Chamber of Commerce. The company must present the first list when it sets up and then update it any time there is a change in one of its shareholders or in the title of posses of the capital shares. The Italian Legislative Decree n° 58 of 1998 (art.120) obliges all listed companies to declare the list of the relevant shareholders according to some thresholds to the National Committee of Inspection on Listed Companies to be quoted on the stock exchange. Italian law on Consolidated Accounts (in application of VIIth European Council Directive) requires to each group head producing consolidating accounts to publish the complete list of all legal units (resident and not resident) controlled (directly or indirectly) or participated. For each legal unit in the area of consolidation is available the share of direct ownership or control it has on other legal units and this is available not only for the resident ones but also for the not resident. Therefore downward chains of control between not resident legal units can be calculated.

³ The operational criteria to identify a control link are such that at least one of the following conditions must be satisfied: 1) A legal unit controls directly, by holding at least 50 per cent plus one of the voting rights of another legal unit; 2) A legal unit controls indirectly, trough other controlled legal units, at least 50 per cent plus one of the voting rights of another legal unit; 3) A legal units fully integrate all the accountings of another legal units, regardless of the capital share she holds in it; 4) A pool of legal units or physical persons declare to the competent regulatory authority that they jointly control another legal unit, even though they hold a minority capital share.

linked by control relationships in a hierarchical order, such that all the chains of control point up to a top legal unit, that is the 'candidate group head'.

The result with data reference year 2005, represented by the following picture, shows percentage values of the overlapping area of the sources with respect to the total number of legal units.

Contribution by source on total legal units in the Enterprise Groups Register



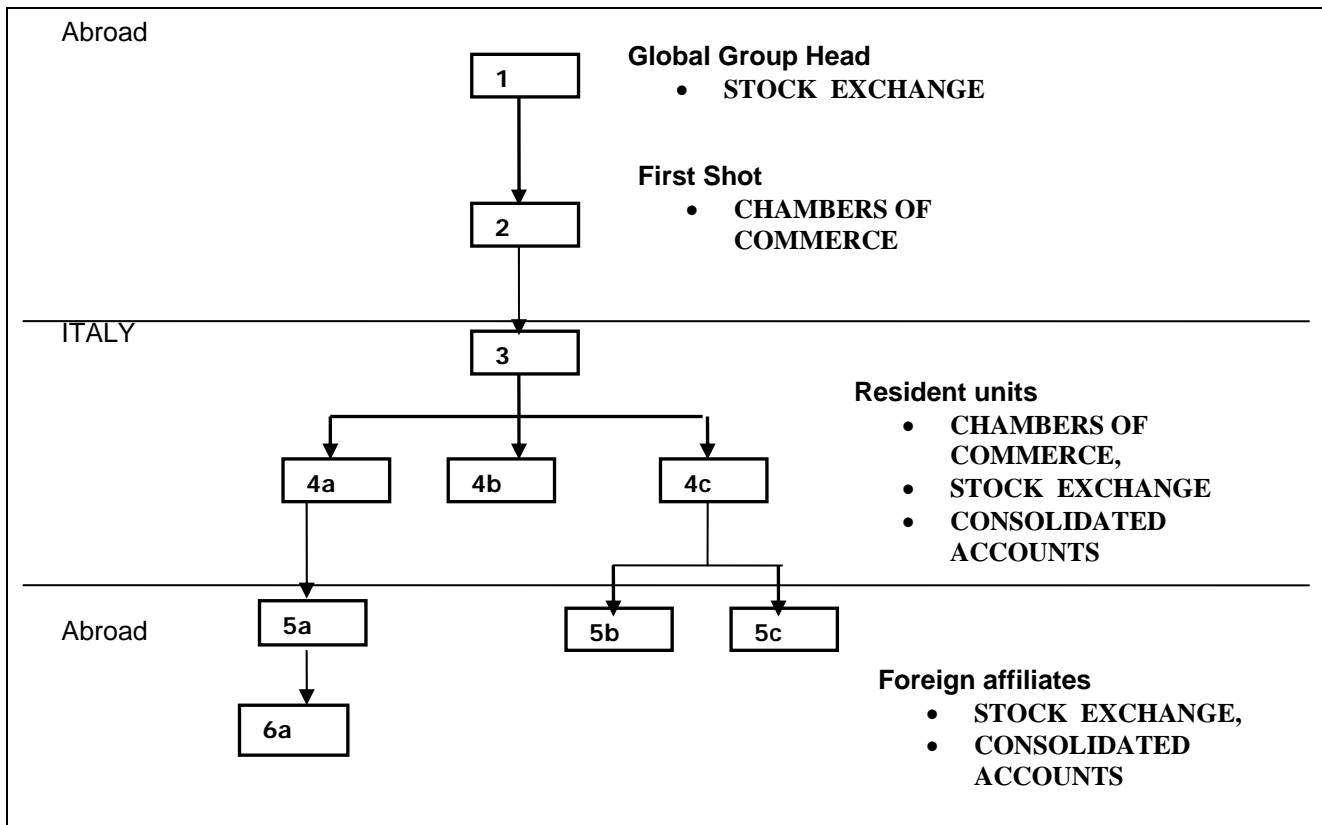
Unfortunately the only use of these three sources is not sufficient to reconstruct the complete structure of multinational enterprise groups with a good coverage. The only source providing good quality information about global chains of control outside Italy is the Stock Exchange, that for listed companies identifies both Global Group Heads located abroad and foreign affiliates of Italian group heads.

The contribution of the three sources to the identification of resident and non resident unit is described in the following picture.

- 1) The stock Exchange provides information about resident units and their relationships both upward - up to the global group heads - and downward with resident and non resident units.
- 2) The Consolidated accounts give complete information about all affiliates (resident and non resident) of Italian group heads, global or truncated.
- 3) The Chambers of commerce ensure a complete coverage of all resident units and their relationships with other resident units – including natural persons, while relationships with foreign units are tracked only up to the *first foreign controlling unit* (also called first shot or foreign immediate parent)

In conclusion, the method of integration based on (Italian) administrative sources reconstructs complete chains of control only within the national territory and only for a limited subset of group (listed ones) chains of control abroad.

Contribution on the identification of resident and non resident legal units by source



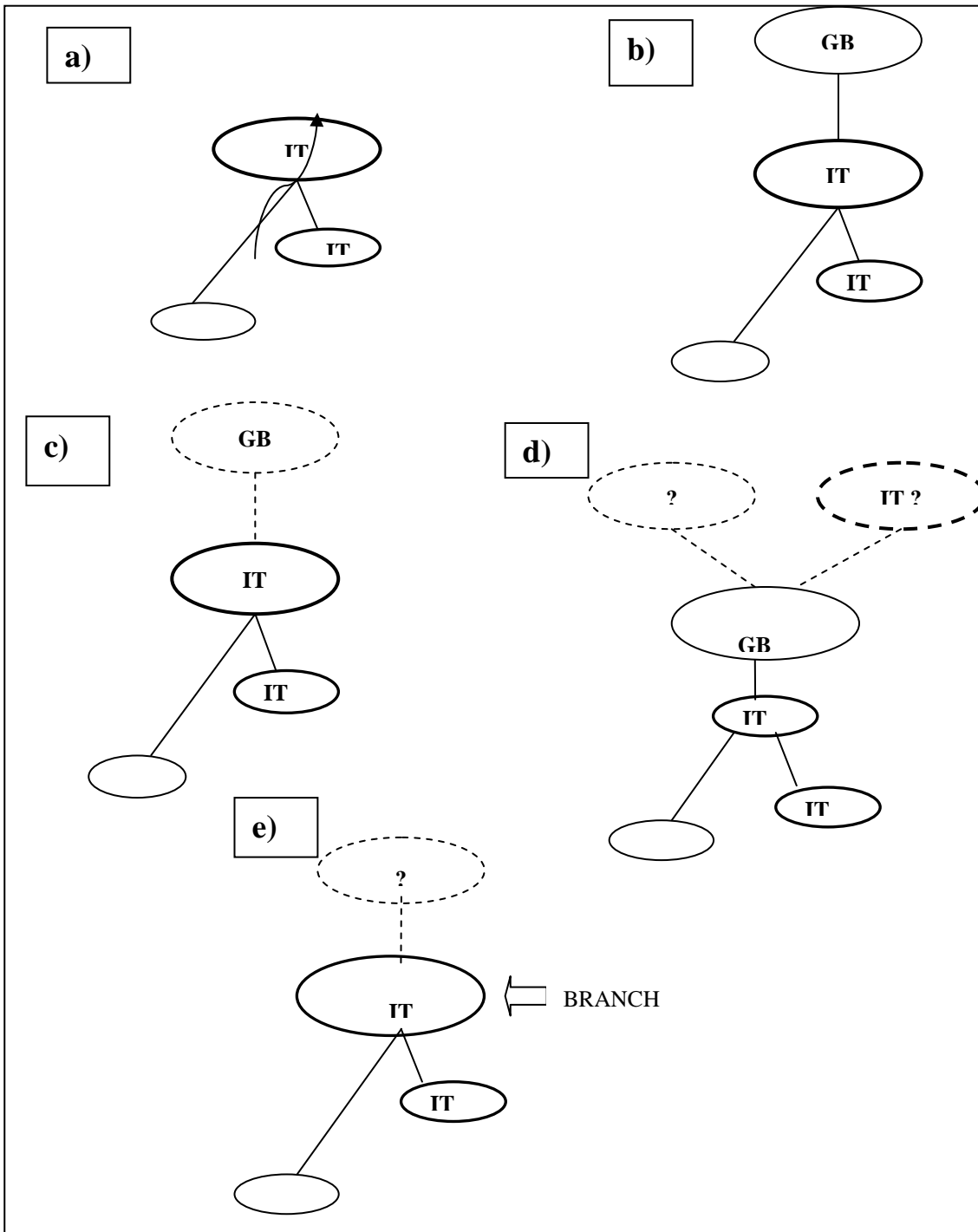
The method adopted, which is completely automatic, provides at the top of each chain a 'candidate group head', but following what has been said above, there is no guarantee that it is a real Group Head. Such unit could in fact be:

- a real Domestic Global Group Head of a multinational group;
- a real Foreign Global Group Head of a multinational group;
- a Domestic Truncated Group Head of a multinational group;
- a Foreign First Shot unit (or immediate parent), whose Global Group Head could be either foreign or even domestic;
- a Foreign Branch registered in Italy, whose Global Group Head is Foreign. For these units no information about their shareholdings are reported in the administrative sources, it is for this reason that they may appear at the Top of a chain.

Moreover Foreign Branch registered in Italy, that do not control other resident units will not be part of any group and appear as resident and independent legal units, but will not be part of the Register of EG.

The following picture describe the five situations. Dotted lines mean that the unit is not identified in the Register, bold lines indicate a resident unit and normal lines other non resident units. Also large ellipsis indicate 'candidate group head' and small ones indicate controlled units.

Different 'candidate group heads'



For all such reasons group heads and their country of residence have to be further validated.

To this aim the Register makes use of the results obtained from the Istat survey on foreign affiliates⁴. There exist two kind of statistics on foreign affiliates: *Inward statistics on foreign affiliates*, describing the activity of foreign affiliates resident in the compiling country having a non resident Ultimate controlling Unit (UCI) and *Outward statistics on foreign affiliates*, describing the activity of foreign affiliates abroad controlled by a resident Ultimate Controlling Unit resident in the compiling country.

⁴ According to Regulation 716/2007 'statistics on foreign affiliates' shall mean statistics describing the overall activity of foreign affiliates; a 'foreign affiliate' means an enterprise resident in the compiling country over which an institutional unit not resident in the compiling country has control, or an enterprise not resident in the compiling country over which an institutional unit resident in the compiling country has control.

In order to complete and check information on group heads in the Register, it is considered the Inward side of the survey, where the questionnaire requires several information about ultimate control to the surveyed enterprise. The definition of control used in the survey⁵ is coherent with the concept applied in the Register, on the other hand there are some differences between the definition of Ultimate Controlling Units and group head and also between the operational criteria to identify the country of residence, that will be discussed in next paragraphs.

The method of integration with the survey

The survey on foreign affiliates carried on by Istat is biannual⁶. The field of observation of Inward statistics is constituted of enterprises and local units (branches) residents in Italy and subordinates to foreign ultimate control, that operate in sectors from C to K and M-N-O of the NACE classification. In the survey the respondent self-classifies itself as being an independent enterprise, an enterprise belonging to a group with domestic control, an enterprise belonging to a group with foreign control or a branch⁷ of a foreign enterprise. In case of non independency the respondent has also to provide the *denomination and country of residence of the Ultimate Controlling Unit (UCI)*. No other information about its immediate parent or the upward chain of control between itself and the UCI is required, since it would be out of scope for the survey and too burdensome for the respondent to reconstruct the whole structure of relationships abroad.

The population of resident enterprises under foreign control represents a small subset of the general population of active enterprises in Italy, but it contributes quite significantly to the main economic aggregates. Since the Regulation 716/2007 requires a high level of sectoral and geographical details for many characteristics, the correct identification of such population is crucial for the quality of the final Inward estimates in the requested domains. To cope with non-response, totals are estimated applying methods of calibration, making use of known totals of the population available from external sources.

Despite statistical methods allow to get correct estimates at aggregate levels, the problem non-response, in particular we refer to partial non-response, is difficult to handle in the process of integration of the results into the Register. The lack of information is often about ID characteristics of the UCI, because the respondent indicates the existence of a foreign UCI and possibly also the country of residence, but not its exact denomination. In all such situations there is a need for a decision whether to accept or refuse such partial information. Another solution, that is the one adopted by Istat, is that some profiling activity in order to complete the partial non-response is carried out. This is done by the Section responsible for the survey, during the usual checking, with lot of time and resources spent for it. At this point information can be treated in the Register, even though some other difficulties can arise.

I will discuss separately the two main issues: 1) technical integration, that has to be with the structure and kind of information returned and 2) conceptual integration, that has to be with differences in operational criteria adopted by the Register and the survey as regard to the UCI and the country of residence.

It is convenient to keep separate these two aspects in such a way that in the first stage integration is carried on as if there are no conceptual differences among these characteristics, that allows to concentrate on the technical solutions, later the output is analysed and the effects that such differences may have had on the final results are evaluated.

It is possible to summarise the kind of feedback that can be expected from the survey. Only results different from the Register information are described:

1. The respondent units was not included into the Register and the survey provides identification characteristics of it and its UCI.

⁵ According to Regulation 716/2007 control means the ability to determine the general policy of an enterprise by choosing appropriate directors, if necessary. In this context, enterprise A is deemed to be controlled by an institutional unit B when B controls, whether directly or indirectly, more than half of the shareholders' voting power or more than half of the shares; 'foreign control' shall mean that the controlling institutional unit is resident in a different country from the one where the institutional unit over which it has control is resident.

⁶ See the Methodological Note published by Istat with reference to Inward FATS Survey:

http://www.istat.it/salastampa/comunicati/non_calendario/20080416_00/noteinformative20080416.pdf

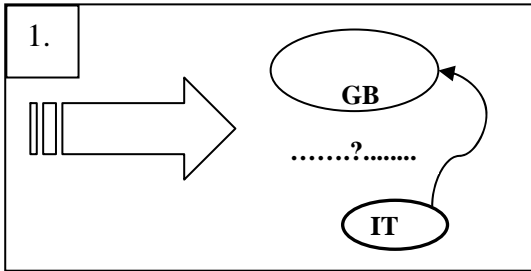
⁷ Branches are local units dependent on foreign-controlled enterprises constituting separate legal entities and considered as enterprises. Also, local units not constituting separate legal entities and treated as quasi-corporate enterprises in accordance with the European System of Accounts 1995 set up by Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the Community (1) and the United Nation's 1993 System of National Accounts, shall be deemed to be enterprises for the purposes of the business registers.

2. The respondent unit is included into the Register at the top of a group, it is a 'candidate group head' while the survey indicates a superior UCI.
3. The respondent unit is included into the Register at an intermediate level in the group and the survey provides an UCI different from the group head in the Register.

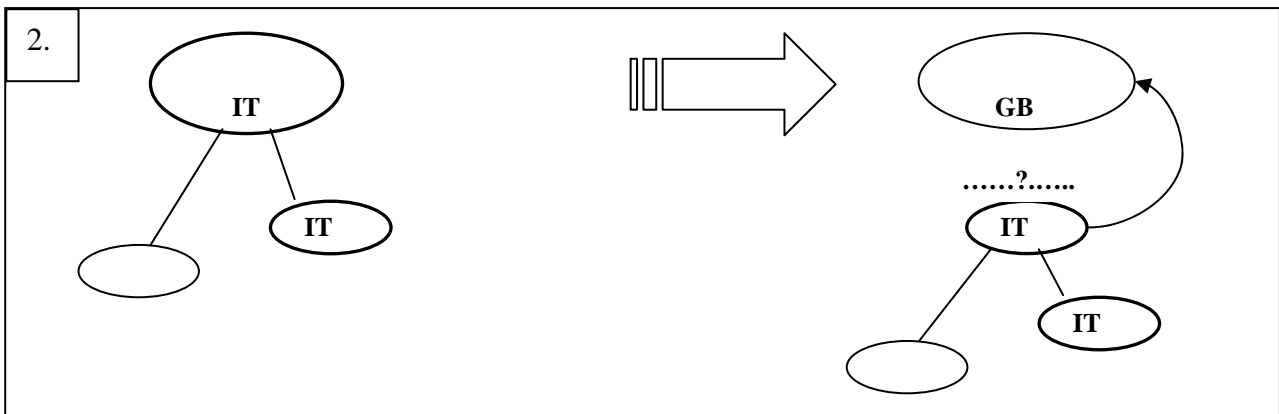
In the first case new groups are created into the Register and they will be composed of one resident enterprise and the non resident UCI.

The relationship that can be created between the new enterprises and their respective UCI will be an indirect one, since the complete structure of the group abroad remains unknown.

The new enterprises normally have a significant economic weight on the domestic economy, so it is quite important to have them in the Register and in this case the survey helps to improve the coverage of the Register.

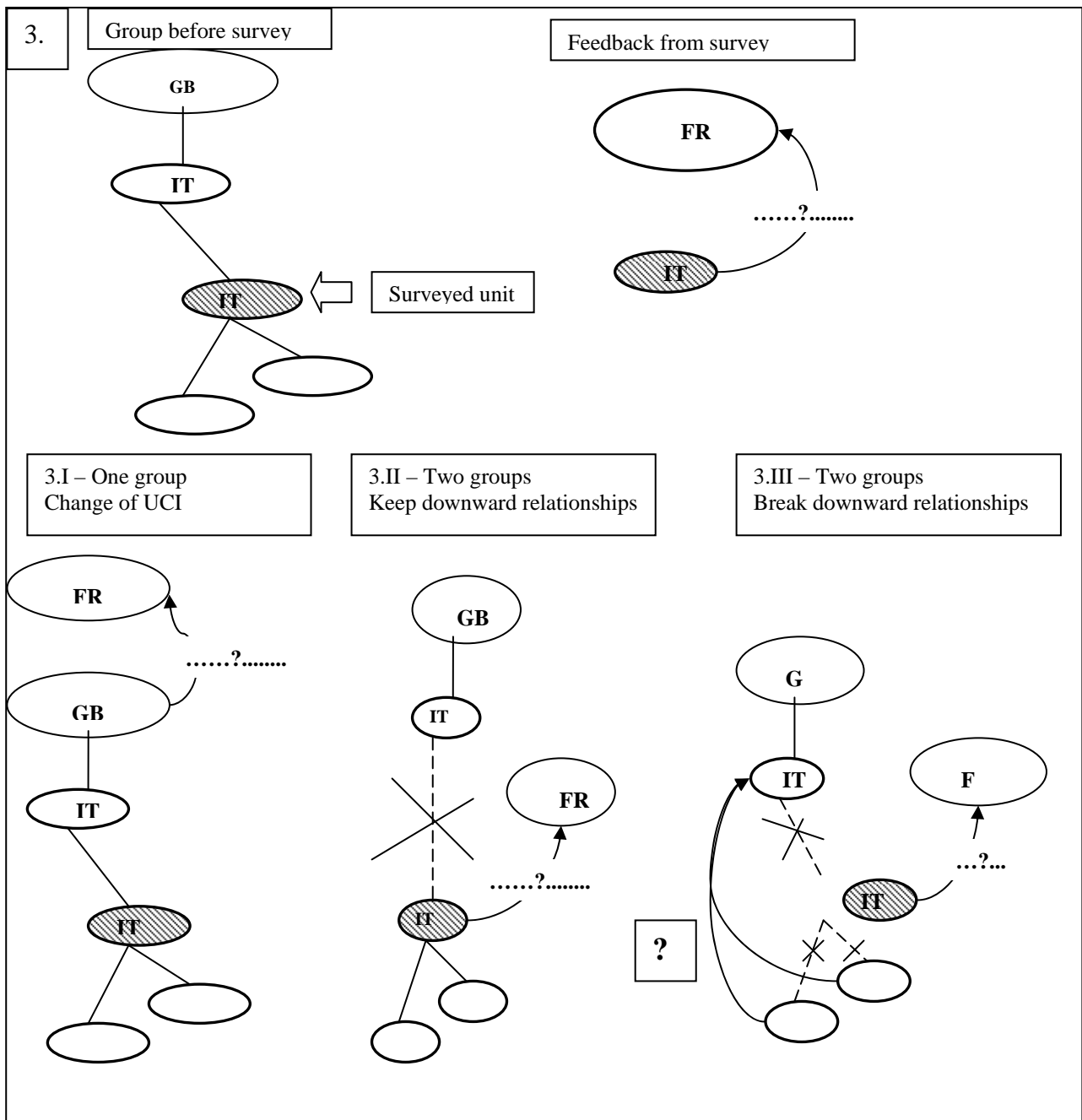


In the second case the survey completes the structure of an existing group adding a new (indirect) relationship at the top of the group that is in the register.



The third case is the most complex one. The main point is that the structures of the groups reconstructed in the Register may be different from the structures known by the respondent at the time it was interviewed. This can be due both to errors (wrong relationships in the Register) or to variations (different updating of the Register with respect to the structure known by the respondent). The hypothesis is that surveys' feedbacks are correct, since they have already passed the checking and profiling procedures, so we do not have to care about possible errors from the respondents, too.

On the other hand errors can be introduced as a consequence of the decision taken in the integration. In fact it could be possible to apply a UCI to a whole group structure, that is different with respect to the structure known by the respondent, or it could be possible to break in two or more parts a correct group structure. These results are shown in the next picture.



After several simulations, it appeared that the quality of the answers was better the closer was the respondent to the UCI in the hierarchy of the group. Therefore the best solution for integration was to adopt solutions like 3.I when the respondent unit was placed at a higher level in the hierarchy of the group, solutions like 3.II when it was placed in a lower positions and solutions like 3.III when all units downwards result ceased. As a result of the integration, a validated version of the Register is obtained, including new information on UCI and its country of residence.

In conclusion, using the feedback from the survey allows to add information of the Register with regards to the UCI and its country of residence even though it does not ensure that correct relationships are reconstructed at a global level.

The solutions adopted are such that they minimise the breaking of groups' structures in the Register and keep a good level of coherence with the survey's result. Having incorporated results from the survey with an improved quality allows to use the Register not only as a sampling tool but also as analytical tool for analysis on the structure and dimension of domestic and multinational groups.

The following table shows the effect on the Register on the share of foreign controlled groups (their enterprises and employment) with respect to total groups (enterprises and employment) before and after the integration of the survey.

Groups' size class	Before the survey integration			After the survey integration		
	Groups	Enterprises	employment	Groups	Enterprises	employment
Total employment	%	%	%	%	%	%
1-19	8,4	5,3	5,9	11,1	7,1	4,0
20-99	5,6	3,6	5,8	10,2	6,6	8,8
100-499	10,3	6,5	11,2	19,7	13,9	25,4
500-4999	16,6	9,9	16,5	33,1	20,6	63,6
5000 +	15,8	3,5	12,3	32,0	6,6	27,5
N. enterprises	Groups	Enterprises	employment	Groups	Enterprises	employment
	%	%	%	%	%	%
1	20,5	20,5	26,5	28,6	28,6	46,6
2	1,9	1,9	8,0	3,4	3,4	17,3
3-4	2,4	2,4	9,9	4,6	4,7	24,9
5-9	5,6	5,8	23,5	10,7	11,2	35,5
10-49	7,7	7,9	7,9	16,2	17,2	22,0
50 +	2,7	1,8	0,3	6,7	3,9	0,7
Total	8,0	5,3	12,0	12,0	9,0	23,8

After integration of the survey the share of foreign controlled groups in the Register increased about 30%, while number of enterprises and employment under foreign control almost doubled. Aggregate statistics from the Register have been compared with survey's statistics showing a high level of coherence in all domains.

Evaluation of conceptual differences and main conclusions

From a technical point of view the activity carried on show that integration with survey's result is feasible and even though it is not a perfect process, it allows to improve the coverage and quality of the Register as a statistical tool. To complete the analysis it will be interesting to produce a measure of the errors introduced by the integration.

If the whole process will be considered successful a complete cycle between Register and survey could be established, such that every two years an updated structure from the Register is used for sample selection and new surveys' feedbacks are then used to improve the quality of the Register.

Despite the technical aspects, some conceptual issues remain to be re-solved in order to arrive to a full coherence between the Register and the Inward survey on foreign affiliates. A full coherence is necessary both for the Register and for the survey.

The main issues that are not yet completely allined and have to be taken into account are:

- 1) The feasibility of having natural persons as Ultimate Controlling Unit in the Register
- 2) The operational criteria to identify the country of residence of the UCI
- 3) The definition and treatment of truncated groups
- 4) The identification and treatment of changes in groups' structure

- 1) *The feasibility of having natural persons as UCI in the Register*

The definition of UCI in Regulation 716/2007 indicates that any institutional unit can be considered as a group head, and operational criteria in FATS Recommendation Manual include also natural persons. On the other hand the Register, according to Regulation 177/2008, should record information about resident legal unit and enterprises also it does not *“apply to households insofar as the goods and services they produce are for their own consumption, or involve the letting of own property”*.

In the Italian business register this problem has been overcome because the structure of information coming from Italian administrative sources contains natural persons too, therefore for the time being the Register adapted to the need of the survey fully. Moreover the Register's system can count the groups also excluding natural persons as group head in a flexible way. But in the majority of European Registers this is not the case and as soon as the EuroGroup Register will enter into place there will be the need for a general and harmonized decision. What would happen if such harmonisation will not be reached is discussed in the following.

2) The operational criteria to identify the country of residence of the UCI

Another point where there is not immediate coherency between the Register and Inward statistics are the operational criteria to identify the country of residence of a UCI and as a consequence country of residence of the whole group.

FATS Recommendation Manual indicates operational criteria to identify the country of residence of foreign control also in cases of joint ventures and multiple minority ownerships, where there is not a unique UCI, while in the Registers such situations are not recognised. The Register requires to identify a real unit as UCI and the criterium of control has to be respected.

If a solution for this inconsistencies and that under point 1) will not be found, this will have an impact on the possibility to correctly define the target population of inward and outward statistics coherently.

As pointed out in the OECD Manual on Globalisation Indicators *“one major draw back of these two target population is the overlap between them”* since *“foreign affiliates can also control affiliates abroad and are therefore be included in both the foreign affiliates and parents target populations”* (...). *“This overlap creates double-counting when estimating total foreign affiliates activity in a country and across countries”*.

The production of significant Outward statistics is not independent from a correct selection procedure of their parents resident in the compiling country. In fact, what is completely new in the production of structural statistics on affiliates abroad is that the target population resident in the compiling economy does not correspond to the statistical units of analysis, the affiliates abroad. On the other hand the latter are not statistical units of observation in the country where the parents are resident. In order to obtain international comparable statistics, there should not be any overlapping between the Inward population and the parent company resident in the compiling economy, whose affiliates' abroad activity has to be measured.

In order to avoid such problems it is necessary to adopt a mutually exclusive classification of units such that the one suggested by the OECD Manual, which suggests to classify the populations into :

- a) Foreign affiliates without affiliates abroad;
- b) Foreign affiliates with affiliates abroad (or parent under foreign control, or local parents);
- c) MNE controlled by residents with affiliates abroad;
- d) Non MNE enterprises.

The adoption of such distinction allows to reconstruct the two target populations by summing up the relevant groups, but the FATS Recommendation Manual explicitly says that it does not follow such approach, allowing that a possible overlapping of units in the two population can exist.

Of course the problem of overlapping is even worse if criteria for identification of the UCI (in the Inwards statistics) cannot be translated to criteria for identification of the Outward population. That is, if a natural person is admitted for being an UCI, he/she is not admitted to be a surveyed unit for collecting Outward statistics. The same applies for those UCI that are not identified as unique entities in the Register, in cases of joint ventures or multiple minority shareholders.

3) Definition and treatment of truncated groups

Another point of discussion is about the definition of truncated group and how to treat it in the Register. In accordance with the definitions given in Article 2 of Regulation 177/2008, Registers shall be compiled of:

- (a) all enterprises carrying on economic activities contributing to the gross domestic product (GDP), and their local units;
- (b) the legal units of which those enterprises consist;
- (c) truncated enterprise groups and multinational enterprise groups;
- (d) all-resident enterprise groups.

Article 2 specifies that 'truncated enterprise group' are the set of "enterprises and the legal units of a multinational enterprise group, which are resident in the same country. It may comprise only one unit, if the other units are non-resident. An enterprise may be the truncated enterprise group or part thereof".

From above it can be interpreted that the truncated group heads are units non resident in the compiling country and therefore not part of the Register.

On the other hand information about such truncated groups are available in the Register, since the obligation is for recording variables such as "country of registration, and identity number or name and address of the non-resident legal unit, which controls the legal unit".

Therefore there is a problem of interpretation within the Register about the truncated group, whether it should include or not the truncated non resident group head. Again the choice has implications for the Register both as a sampling frame and as a tool for analysis.

4) *The identification and treatment of changes in groups' structure*

The problem of timing is doubled when we are attempting to integrate statistical information that are relative not only to units but also to relationships between units. It is quite impossible to validate and check the complete structure of a group without fixing a conventional time period of validity of the perimeter and the characteristics of the units. That kind of checking can be carried on only through a profiling activity that analyse the complete structure and composition of all legal units, relationships and enterprises' characteristics.

Any automatic integration of data gives rise to possible errors and determine wrong structure of groups as well as wrong characteristics, among all the most important is the UCI. From what has been described above it is clear that although the integration of different sources bring additional information and improve quality, it has to done taking into account the exact reference period of each source in order to evaluate and treat possible distortion that can be introduced. A great risk is implicit when such kind of integration among sources is done without acknowledgment of changes in groups' structure and their time reference.

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