32. Business Registers for international Trade

Addis Ababa, Ethiopia
12 – 16 May 2014
Mediterranean Sea covers an area of 2.5 million Km$^2$
Islands are about 3,500, with a surface of 95,000 Km$^2$
Their lands cover less than 4 per cent of Mediterranean Sea

That is: in a shipwreck it is very difficult to land at an island...
In Italy about 14,000 enterprises have outward FDI from a total number of about 900,000 units...

...but it is much more difficult to search enterprises in Italy with outward FDI!
The Business Register and the “Castaway” problem

... in proportion, for “our castaway”, it is like the Mediterranean Sea without 3 large islands like Sicily, Sardinia and Crete.
Agenda

- International Framework
- *Golden Rules* to build the BR
- Italian Experience
- Sampling Techniques & BR
The ECB regards payments data as a potentially useful tool in particular to identify the reporting population to be surveyed, i.e. to set up and maintain a register of internationally active firms [4]. This concerns information that is readily available to the banks and that can be supplied to b.o.p. compilers in a fully automated fashion at reasonable intervals...

*Opinion of the European Central Bank, 6 January 2009*
21.12 Business registers can be used as survey frames for balance of payments (BoP) surveys. The data collection for BoP has moved considerably from transaction-based data collection to direct surveys.

EUROSTAT (Business registers-Recommendations manual 2010 edition)
Sources for identifying direct investment units for the survey frame
2.19 The sources of information on potential survey respondents having foreign ownership and/or investment in enterprises abroad are varied, and the work required to compile an information database will depend on the extent to which such an information database already exists in the compiling agency.

IMF - THE COORDINATED DIRECTINVESTMENT SURVEY GUIDE (March 2008)
Golden rules of the “BR - BoP oriented”

Step 1: list of population

The Business Register of the National Institute of Statistics is a good source for determining the complete list of local companies.

Step 2: relevant subpopulation

Listed companies; firms involved in international transactions; dimensional threshold

Step 3: auxiliary variables

Balance Sheet data; presence of FDI; international turnover; sector activity; geographical breakdown
Italian Experience: Why a BR dedicated to the Bop?

Framework (a little historical digression):
The reason why Bank of Italy cannot access to the ISTAT Business Register

For historical reasons there was a sort of detachment between Bank of Italy and NSO (Istat). The idea (of the law) was to maintain clearly separate the function of supervisor of the bank system of the Central Bank and the statistical data production, typically of the NSO. According to the "bank secret", no exchange of information was allowed between the two worlds.

In the 90th years, the Bank of Italy has started to contribute in a factive way to the Euro Area statistical production, and the two functions have been divided also in the Bank.
Against this background

Begin a strictly cooperation between the statistical functions of the Bank of Italy and Istat

They have set up a Committee of Coordination, and many working groups (for instance, BPM6 and NSA 2008 - registers) on specific topics

An exchange of individual data is started (beginning with the Direct Reporting - other services) for the production of European Statistics

The common Oversight of the financial variables is established (first application: FISIM)
Italian Experience: Why a BR dedicated to the Bop?

Against this background

The cooperation between Bank of Italy and Istat for the registers

Exchange information about the Registers: methodologies, possible sources, aggregate figures.

Cooperation for the Italian compiling of the EGR (European Group Register), according with the European Regulation (n. 1097/2010).

In a near future, the Bank of Italy will have access to the National Business Register; and hopefully can contribute to the Register itself.
Italian Experience: BR for BOP purpose

**Target:** Business Register as a complete instrument, integrated and dynamic

**Complete:** it reports all the enterprises potentially involved in international transactions

**Integrated:** different sources are used at the same time

**Dynamic:** the sources can change over time
Italian Experience: BR for BOP purpose

**InfoCamere**, the shareholding consortium of the Italian Chambers of Commerce, **ensures the completeness** of the list of Italian enterprises

- 1.3 million of enterprises
- 800-900,000 enterprises with balance data
- No relevant gap with Istat Business Register
Italian Experience: BR for BOP purpose

Integrated Approach

Different sources are linked by a “Bridge Table”

Source: A
Identification Key: 1

Source: B
Identification Key: 2

Source: C
Identification Key: 3

Bridge Table

<table>
<thead>
<tr>
<th>Id Key 1</th>
<th>Id Key 2</th>
<th>Id Key 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AA</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>BB</td>
<td>200</td>
</tr>
<tr>
<td>3</td>
<td>CC</td>
<td>300</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
Italian Experience: BR for BOP purpose

Integrated Approach

The Keys Map (Bridge Table) is the base of an homogeneous structure

Source: A
Identification Key: 1
Turnover: 100

Source: B
Identification Key: AA
Equity: 200

Source: C
Identification Key: 100
Total Assets: 150

Tom, Dick and Harry Company

<table>
<thead>
<tr>
<th>Id Key 1</th>
<th>Id Key 2</th>
<th>Id Key 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AA</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>BB</td>
<td>200</td>
</tr>
<tr>
<td>3</td>
<td>CC</td>
<td>300</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

Tom, Dick and Harry Company

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Turnover</th>
<th>Equity</th>
<th>Tot. Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom, Dick and Harry Company</td>
<td>100</td>
<td>200</td>
<td>150</td>
</tr>
</tbody>
</table>

Integrated Approach

Italian Experience: BR for BOP purpose
Italian Experience: BR for BOP purpose

Dynamic Approach

Sources can change over time

Timeline

- Infocamere
- Cebil
- Cerved
- Duns & Bradstreet
- Consob
Italian Experience: BR for BOP purpose

- **Italian Business Register**
- **BRIDGE TABLE**: A key map assures the link among different sources
- **REGISTRY TABLE**: Name, address, geographical area, sector, etc
- **QUANTITATIVE DATA TABLE**: Balance data, number of employees, etc
- **FDI TABLE**: Inward, outward, group structure, etc
FDI from Italy to African countries

A QUERY FROM BOP BR
(Data referred to 31/12/2012)
In black the number of FDI &
In red the value in millions of Euro

TOP NUMBER: Tunisia 504 FDI
TOP VALUE: South Africa 469.7 millions

OUT OF THE MAP
Capo Verde: 18 / 40.5
Mauritius: 16 / 2.5
## FDI from Italy to Ethiopia

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>%</th>
<th>Estimated Value (in Euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDIGI &amp; DESPA EAST AFRICA</td>
<td>30</td>
<td>25.535</td>
</tr>
<tr>
<td>EDILMAC DEI F.LLI MACCABELLI SRL (ETHIOPIA BRANCH)</td>
<td>100</td>
<td>36.999</td>
</tr>
<tr>
<td>EAST AFRICA TANNERY PLC</td>
<td>50</td>
<td>976.561</td>
</tr>
<tr>
<td>ITALPROGETTI AFRICA</td>
<td>80</td>
<td>68.800</td>
</tr>
<tr>
<td>DAMI.ET</td>
<td>99</td>
<td>4.473</td>
</tr>
<tr>
<td>DELLAS SPA ETHIOPIAN BRANCH</td>
<td>100</td>
<td>69.339</td>
</tr>
<tr>
<td>REPICO FOR AFRICA</td>
<td>100</td>
<td>80.341</td>
</tr>
<tr>
<td>PLAN CONSTRUCTION PLC</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>DE.RE.AN LTD</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>CONSTA ETHIOPIAN CONCRETE PLC</td>
<td>95</td>
<td>74.142</td>
</tr>
<tr>
<td>CONSTA JOINT VENTURE</td>
<td>95</td>
<td>237.500</td>
</tr>
<tr>
<td>ETHIOPIAN CONSTRUCTION PLANT PLC</td>
<td>95</td>
<td>74.142</td>
</tr>
<tr>
<td>MATTIOLI JOINT VENTURE</td>
<td>76</td>
<td>38.000</td>
</tr>
<tr>
<td>FORTE SICURA</td>
<td>10</td>
<td>100.000</td>
</tr>
<tr>
<td>FRI-EL ETHIOPIA FARMING &amp; PROCESSING P.L.C.</td>
<td>99</td>
<td>72.742</td>
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<tr>
<td>GITTO CONSTRUCTION ETHIOPIA PLC</td>
<td>84</td>
<td>1,018.058</td>
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<tr>
<td>MATTIOLI JOINT VENTURE</td>
<td>23</td>
<td>11.500</td>
</tr>
<tr>
<td>SCAE CONSTRUCTION MACHINERY RENTAL PLC</td>
<td>60</td>
<td>13.728</td>
</tr>
<tr>
<td>PIDIGI &amp; DESPA EAST AFRICA - ERIOPIA</td>
<td>20</td>
<td>17.023</td>
</tr>
<tr>
<td>J.V. SALINI ACCIONA</td>
<td>50</td>
<td>9.000</td>
</tr>
<tr>
<td>SOPRAL SHARE CO.</td>
<td>33.3</td>
<td></td>
</tr>
</tbody>
</table>
The Business Register is useful to check Direct Reporting data.

There are some instruments to put the check level before data acquisition:

- Data Entry
- Diagnostics
- Automatic Input Reply

Diagram:

- Vertical axis labeled "Efficacy"
- Horizontal axis labeled "Distance"

Legend:

- "BANCA D’ITALIA EUROSYSTEMA"
Presence of international transactions in Business Register and Direct Reporting without operations

Interaction between BR and DR

Instant data check

Instant correction of mistakes
Sampling techniques and business register

When variables are highly concentrated

Definition of sampling design

Population List

Estimator of total amount

Business Register

REDUCE POPULATION LIST

CUT OFF ESTIMATOR
Sampling techniques and business register

- Definition of sampling design
- Population List
- Estimator of total amount
- STRATIFICATION (reduce variance)
- RATIO ESTIMATOR
  - REGRESSION ESTIMATOR
  - MODEL BASED ESTIMATOR
- ALLOCATION

When variables have an high dispersion
Sampling techniques and business register

When variables are highly concentrated:
- Definition of sampling design
- Estimator

When variables have a high dispersion:
- List of population unit
- Cut-off
- Stratification PPS
- Horwitz Thompson Ratio Regression Model Based
Business Register in BI direct reporting

- Used for financial stocks/flows but also for non financial transactions ("other services")
- SAMPLING TECHNIQUES
  - Define the population frame
  - Stratification
  - Estimator (ratio estimator)
Business Register in BI direct reporting (the samples)

Each phenomenon is analyzed with a specific sample

Three independent samples are selected

<table>
<thead>
<tr>
<th>Services Transactions</th>
<th>About 3.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI (inward and outward)</td>
<td>About 4.000</td>
</tr>
<tr>
<td>Financial Stocks and Flows</td>
<td>About 6.000</td>
</tr>
<tr>
<td>Other Financial phenomena</td>
<td>About 3.000</td>
</tr>
</tbody>
</table>

Total DR | Less than 7.000
Business Register in BI direct reporting

From Samples to Questionnaires

Services Sample → TTN - Services Transactions - Q

Financial Sample

EMF - FDI Flows - M
CAF - Financial Stocks - A
SAC - Group Data - A

Big Players

OMF - Financial Flows - M
or
OTF - Financial Flows - Q
Other Services: Sampling Techniques

Stratification variables
- Presence of international transactions
- Dimension (total turnover)

Presence of international transactions
- Report from the bank system of enterprises involved in international payments

Business Register in BI direct reporting

- Total Turnover
  - Flag = 1
  - Flag = 0

- Census
- Sample
- Out of sample

- 250 mln.
- 100 mln.
- 10 mln.
Conclusions (I)

A common trend is in act in Europe to collect data for BOP and IIP

The Business Register is a primary source for the Direct Reporting surveys: it’s a basic pillar in selecting samples

The optimal selection of sampling is functional to population structure and concentration of the investigated variables
Conclusions (II)

- Advantages in using a BR for multipurpose survey (FDI stock + financial flows + other services) CREATE A BOP BR

- NSI BR is a good starting point (population list + turnover + number of employees)

- Other variables (total assets) and attributes (presence of FDI, international transactions) are useful for Bop/IIP purpose

- Cooperation between NCB and NSI

- Not enough... Need for European Group Register
Regional Seminar on International Trade Statistics: Implementation of recommendations

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