Abstract

The Tunisian Business Register (RNE) is created pursuant to the 94-780 decree of 4 April 1994. The Tunisian National Institute of Statistics (INS) manages the TBR:

- Attribute a national identifier for each enterprise.
- Codify economic activity using the Tunisian National Activity Classification (NAT).

The Tunisian Business Register was created primarily based on administrative sources. The first source is the Finance Ministry. Their files cover all legal and local units, whereas it represents the most exhaustive source allowing the detection of firms in Tunisia. The second source is the Social Security Fund. Their files cover three kinds of units: employers, one person units and salaries.

The main goals of the TBR creation are:

- Collecting and updating data regarding companies: identification, location, activities, size...
- Harmonization and standardization of variables according to standards and statistical concepts: activity, address, size...
- Preparation and dissemination of statistics on enterprises
- Monitoring of business demography
- Using the register as a sampling and estimation frame for business surveys.
The most important problems in managing the TBR are:

- Absence of unique or identifier
- Multiple classifications (economic activity, legal form…)
- Diversification on writings (person name, company name, label activity…)

To resolve these problems, a statistical methodology is developed in the INS: An automatic procedure of normalization and standardization of writing, an automatic procedure of matching files and modes to estimate activity status, localization, economic activity and size.
1- Introduction of the Business Register

   1.1- Legal framework
   1.2- Goals

2- Contents of the Business Register

   2.1- Legal units
   2.2- Local units
   2.3- Employees

3- Management of the Business Register

   3.1- Sources of update
   3.2- Problems of sources
   3.3- Solutions
   3.4- Steps of update

4- Quality improvement

   4.1- Status of activity
   4.2- Localization
   4.3- Economic activity
   4.4- Number of employees
   4.5- Turnover

5- Conclusion
1- Introduction of the Business Register

1.1- Legal framework

According to the Decree 94-780 of April 4, 1994:

➢ The Business Register (BR) is created and managed by the National Statistical Institute (NSI)

➢ NSI attribute a national identifier for each legal or local unit in the BR

➢ NSI codify the economic activity using the Tunisian Classification of Activities (aligned with international classifications)

1.2- Goals

➢ Collecting and updating data regarding enterprises: identification, localization, activity, size, turnover, benefits...

➢ Harmonization and standardization of variables according to standards and statistical concepts: activity, address, size...

➢ Dissemination of statistics on enterprises, employment and business demography

➢ Using the register as a sampling and estimation frame for business surveys

2- Contents of the Business Register

The Business Register covers three kinds of units: legal units, local units and employees.

2.1- Legal units

The Tunisian Business Register covers all legal units and contains diverse information:

Identifying variables: statistical and administrative identifiers, name, legal form, tax regime, nationality…

Localization variables: number, street, postal code, district, governorate, phone number, fax, email, web-site…

Demographic variables: dates of opening, cessation and reactivation, status of activity….

Economic variables: main activity, auxiliary activities, number of employees, wages, turnover, incomes, benefits and losses, imports, exports…
2.2- Local units

For local units, we have the same general information as legal units (identifier, name, address, dates, activity…) except size information (number of employees, turnover…).

2.3- Employees

The file of employees contains:

- Employee identifier
- Name and surname
- Birth date
- Sex
- Detailed address
- Date of affiliation
- Wage
- Employer identifier
- Employer name
- Employer address

3- Management of the Business Register

3.1- Sources of update

The Tunisian Business Register is updated using principally administrative sources:

- **Finance Ministry:** its file contains all legal units, whereas it represents the most exhaustive source allowing the detection of firms in Tunisia.

- **Social Security:** its two files (employers and individuals) are also considered from the largest data base identifying firms and their employees.

3.2- Problems of sources

- Absence of a common identifier between sources
Diversification of classifications used by sources
Lack of detail on declarations and lack of standardization of writings
Delay or absence of update in case of change
The number of employees declared is not decomposed into permanents and occasional

3.3- Solutions
Development of an automatic program for data matching
Diversification of the sources of update (adding other administrative sources and using the results of surveys)
Development of statistical methodologies (deterministic and probabilistic models) for the estimation of key variables (status of activity, economic activity, address, number of employees, turnover...)

3.4- Steps of update
Acquiring files: verification, standardization and attribution of statistical identifier
Matching files: Find matches between the two files (the sources files don’t have the same identifier)
Codifying activity: based on the main activity declared by the enterprise and then can be corrected according to the survey’s results. We use Tunisian classification of Activities which is aligned with international classifications (CITI Rev4)
Updating the business register: entries, exits, change of addresses or activities
4- Quality improvement

In order to improve the quality of the BR, the NSI has implemented statistical methodologies for the estimation of key variables: status of activity, localization, economic activity, number of employees and turnover.

4.1- Status of activity

The problem of false actives is partly explained by the gap between the real date of cessation and its registration in administrative files and eventually in the business register. Note that declaring cessations is not always made during the same year of cessation (25% of cases the declaration is made after more than 2 years of the real date of cessation).

In fact, we can find enterprises that are economically inactive but are still active in the Business Register. To resolve this problem, the NSI has developed statistical methodologies to estimate the status of activity.

**Deterministic method:** Identify the status of activity using decision rules based on signals of activity (administrative declarations: number of employees, value of imports or exports…).

**Probabilistic method:** Allocate to each enterprise a probability to be active based on a regression model using as a benchmark the results of surveys.
4.2- Localization

According to the business register’s recommendations, addresses must be detailed as possible (governorate, district, postal code, street, number, phone number, website…)

Address problems are mainly due to:

- Inaccuracy of the declarations made by the firms
- Change of address undeclared by firms

For all enterprises, the rate of defects is around 14% for Micro Enterprises (Micro-E) and 5% for Small, Medium and Large Enterprises (SMLE).

To resolve this problem, a deterministic model was developed to improve essentially addresses of SMLE. The model chooses the most common address in different sources. In case of discrepancy, we use a priority order between different sources.

Missed of additional sources, address correction for Micro-Enterprises remains limited.

4.3- Economic activity

The main activity of the enterprise is the activity that contributes the most to its added value. In our case, in absence of the value added by activity, we codify the main activity on the basis of enterprise’s declarations.

There are some problems during the codification of activity which are:

- Each partner uses its own classification for activities which doesn’t have always the detail of the National Classification used in the Business Register.
- Declarations are sometimes intentions of activity and not the real activity.
- Declarations don’t always present the precision allowing codifying the activity according to the National Classification of Activities.
- Files are not always updated whenever there is a change of activity.

To improve the activity quality for SMLE, we have developed a deterministic model for the estimation and we have included other administrative sources like the APII files, those of foreign trade in addition to surveys results. The model chooses the most frequent code, otherwise according to a priority order between sources. To end, we must do a manual validation especially for large enterprises.
The quality of the activity for Micro-Enterprises remains based on the reliability of the Finance files.

### 4.4- Number of employees

The Business Register is the most exhaustive source which covers all the formal employees in private sector except agriculture. The number of formal employees in the BR is defined as:

\[
\text{Employees} = \text{Salaries} + \text{Individuals}
\]

For salaries, the file of the Social Security is the most important source for updating. This file contains quarterly declarations of number of salaries and their wages (made by employers).

For Individuals, the files of Finance Ministry are the unique source of update.

To improve the quality of this information, statistical methodologies are used to estimate the number of employees from different sources available (administrative sources and surveys results).

A comparison was made between the employment covered by the Business Register and the employment covered by the social survey (which contains formal and informal employment) shows that the coverage of total employment in the Business Register is around 70% in private sector excluding agricultural operator and 90% excluding construction.

### 4.5- Turnover

The unique administrative source for Turnover is the Finance Ministry files. This source covers around 70% of the turnover. Some deficiencies exist in the file like unit errors, typos and missed values.

To improve the quality of turnover for small and medium enterprises, two main methodologies are used:

**Deterministic method:** using additional information available that usually represents a fixed share of the turnover (wages, benefits, taxes, value of exports...).

**Probabilistic method:** using a predictive model based on the history of enterprises, or using a regression model based on neighborhood information.

The case of large enterprises, no estimation can be done. We have to collect the information for each enterprise.

For Micro-Enterprises, the unique source is the five-year survey on micro-enterprises.
5- Conclusion

Statistical methodologies are developed using economic surveys as a benchmark source to control and improve the quality of activity status, localization, economic activity and size.

The future works planned are:

First:

- Diversify sources of update in order to improve the quality of the Business Register.

Second:

- Create a legislation requiring that all administrations have to use the identifier of the Finance Ministry as a common identifier.
- Convince all the partners to use the official classifications (principally for activity)
- Create a Business Register for local units in order to establish regional accounts