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**The treatment of variables within a business register:  
a Probabilistic approach**

Abstract of the document submitted by the Istat<sup>1</sup>, Italy

1. The national business register is the list of all enterprises operating in a country, identified and recorded with the individual values of some structural variables; it is necessary to keep this file for statistical purposes. In Italy, when setting-up and updating such an archive, for several reasons, (costs, statistical burden, time...) most of the data are to be taken from administrative files.

2. A business register, that is built upon information provided by several administrative sources, is expected to bring some problems in terms of the imputation of the values of variables to the units. In practice, for a generic enterprise in the register, we often have several mis-matching signals; sometimes we even do not have signals at all, but we have to provide the data.

3. A problem of choice has to be faced for each enterprise in the register for which information is inconsistent, a problem of estimation is to be solved for each unit where information is completely missing. The methodologies have been designed in order to face these main categories of problems.

4. A probabilistic approach has been advanced by using variable-dependent modelization. Therefore, i) instrumental variables have been used as proxy for the size when working on employment figures with a conditioned probability formalization; ii) a logistic model for the calculation of probabilities is used when deciding upon the real status of activity of enterprises; iii) a hierarchical decision process is run when establishing the code of economic activity through nested choices.

5. Such methodologies could be developed and adapted by other users, since the principle of exploiting administrative information seems to be more and more widely adopted.

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