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A data base for the Italian residential real estate market

In the real estate appraisal, the principal problem consists in the availability of the prices and the rents bargained, on which to found the forecasts of the prices and the future rents and the appraisal of market value. For the valuation standards, the reference to the real estate market is fundamental in the process of appraisal: to make truthful appraisals doesn't exist other way that the collection of the true prices whereas they are formed.

The study proposes to census the sources of available real estate data and to develop an operational scheme for the punctual collection of the data and for the realization of a data bank with particular reference to one defined real estate reality.

To purpose of the study, for a zone of the city was calculated on a vacancy rate on a sample of urban estate placed in the Municipality of Prato.

1. Introduction

The main procedures for resolving estimative questions is the comparative method (A.D. Berloco- G. Grittani, 1989), founded on the collection of market data. The need to have adequate market references is felt in all of professional areas, however too many times evaluation reports are not supported by rigorous market research. In fact, about the need for reliable data to support the professional work of evaluators, our country is still lagging behind and in particular do not have databases to provide timely and reliable real estate data.

It is well known that in Italy the veracity of the data is a complex problem to solve also linked to tax issues, so the real sales data collection must be carried out on official documents and by trust sources represented by those directly involved. Unfortunately, the main information sources in the Italian real estate sector, urban and rural, they basically refer to the average market prices, minimum and maximum of macro-or micro-areas investigated and do not allow the evaluator to acquire specific properties and primary data from which these quotes they would be generated.

Some types of real estate databases have been tried in the past in Italy, for example through the "bank of prices" (M. Grillenzoni, 1970) and Observatory of the land market of University of Bari.

Both experiences were aimed at the systematic collection of information relating to real estate sales in the agriculture, through the adoption of specific organizational and operational criteria (M. Grillenzoni, 1971) that allowed to set up an

effective integrated system of detection and analysis of the dynamic real estate market in Emilia Romagna and Puglia (M. Grillenzoni, 1988).

From this analysis of the context, a specific database for the Italian residential property market has been launched in a Tuscan estate reality (Prato). In order to demonstrate the potential of real estate data collection and storage, was calculated statistically the *vacancy rate* in a market segment. This is a highly specific index for the detail of the time reference (2007-2011) and spatial, has no equal reflected in available statistics in Italy.

2. International standards and data collection

The design of “real estate data bases” can not be separated on rules set out by the international standards of evaluation.

It should be preliminarily noted that the estate data consists of the real market prices and the technical and economic characteristics of buildings. Consequently, the estate data collection must be made on the basis of defined procedural steps and through a survey form, that is a document composed of a literary, a graphic and photo part.

The detection of the property market requires preliminary to define some operational aspects (Tecnoborsa, 2011), related:

- the type of detection;
- detection and sources of information and their composition;
- model survey form or questionnaire;
- ways of processing and statistical estimation and economic data;
- detailed rules for store data;
- ways to present the results.

Through the definition and implementation of these aspects is meant to ensure the veracity of estate data (economic and technical), accuracy relative to the diligence, competence and precision of collection by the detectors.

To reach these aims, the investigation must refer to a standard detection procedure and a specific quality control data on the storage, processing and presentation of results (M. Simonotti –M. Ciuna, 2011).

In addition, operations in the detection and collection of data raises the need to have a code of conduct of the detectors, is a set of rules of conduct that operators must follow to collect data.

These methodological assumptions were regularly adopted for the construction of the database on the property market in Prato; we referred to the working principles set out in international standards, as well as observation and analysis of other international contexts, active in particular in the USA and Great Britain, where for decades the collection and distribution of data is done through the company specialized in archiving.

In fact, in the international arena there are numerous opportunities to acquire the information necessary for carrying out evaluations conform with the estima-

tive standards. Across the web you can get market information or for free (www.zillow.com or www.eppraisal.com) either by consulting services fee (www.CoStar.com operating both in the U.S. and Europe) to provide “comparable”, real estate valuations or complex market analysis.

3. Database “Prato”

In Italy there is no publicly available estate database, where data are detected punctually and the information is collected under a common standard.

Therefore, it is designed and launched a specific data collection relating to a specific urban property market. That collection was conducted in accordance with D.lgs 196/2003 relating to the processing of personal data and relying on the effects of the rule which states can declare in contracts of sale “double value”, one of them only for tax purposes and the other refers the effective price paid (L. 248/2006).

The survey designed for specific purposes and in particular:

- estimates of market value and the market rent of individual buildings and groups of properties in large-scale assessments (mass appraisal);
- the determination of vacancy rates of residential rents and its application in the analysis of an investment;
- statistical sample, the market index, the segment parameters, etc.;
- conducting studies and research the real estate sector.

The data collection was conducted in the Municipality of Prato, about the contracts for the sale of buildings for residential purposes, where type of building consists of apartments in buildings with multi-floors and individual houses. The data recorded on special forms have been subjected to quality control to meet the following requirements:

- that the price is formed on recently;
- the information contained in the data are the result of a negotiation took place between opposing parties who have acted without any constraint;
- the data is related to properties with technical-economical characteristics of certain areas of the market (segments);
- the data are verifiable and geographically referable.

The data on which the prices were formed can be proven through the notarial deed of each data although in this regard it should be noted that in Italy, the demand and offer meet and define their business principally in three different phases.

Indeed, over the past decades the practice has established that “the end of the affair” is preceded by a first formal stage where acquirer makes a purchase offer in written form, which follows the relative acceptance and contextual transfer of an amount of money. Subsequently, the parties meet again to confirm their intentions by signing a preliminary contract, sometimes overlaps with the previous act, providing the transfer of another sum of money more substantial.

The final step regard to the transfer of the property by signing a sales contract in the presence of a notary public forms of data collection properties are then prepared to detect the dates and the information contained in the three phases mentioned above; of course the date on which the price is formed is the date of acceptance of the proposal, which represents the moment when the deal was concluded, and then the first of three phases.

Should also be noted that the acquisition of data by reading the public documents comes as the market conditions are constantly changing, producing a systematic delay and decreasing the time to use the data. To minimize the time of recording data and have more in advance and longer duration of use, the alternative is to combine the first detection mode to another mode, which plans to carry out the collection during the offering for sale, or during the marketing activities of the seller. This type of survey provides immediate data availability and allows to study the behavior of demand and supply during their marketing activities and for defining the length of stay on the market from the supply side in determined areas. It is also possible test the function of price in relation of the market value. This type of collection is therefore 'upstream' and the individual being offered for sale can be defined as "comparable candidates" or "proto-data".

The time of detection 'downstream', that is through the reading of notarial deeds, occurs late, but you can find large amounts of data in discontinuous phase detection in contrast to the model of collection 'upstream' which instead requires an extensive organization in the area and seamlessly over time, than to impose a period of initial start-up, during which the collection began waiting for the first trading. The recognition that occurs during participation in the phase of marketing is a great help to also provide the evidence that the data is a result of free negotiation and through statistical analysis to identify any outliers.

The data entering the database are gathered on a georeferenced, in order to improve the successive geographical research and the possibility of analyze and highlight the influence of the territorial characteristics.

The geo data exported through output from a database constructed properly, it lets their visualization through filters and keywords tags.

The activity detection scheme is developed through a standardized operating by a sequential program (workflow) for single phase external operational (carried out in public offices and real estate agencies and inspections) internal operating phases (carried out "table operation"), dealing with personnel adequately trained for the purpose.

The collection operations involving a group of professionals and real estate agents who operate on the territory and have a deep knowledge of the geographical area in which you collect the data.

The operations of the database "Prato" is allowed, since its inception (January 2007) until December 31, 2010 (the 2011 collection is in progress) No. 4.904 to detect information related to contracts of sale with the seller "natural person" and No. 484 information relating to rental agreements. The temporal distribution of the sales recorded were as follows: year 2007 No. 1.623; year 2008 No. 1.192; year 2009 No. 1.069; years 2010 No. 1.020.

In relation to the location of sales, the overall percentage distribution of the data recorded so far on the different areas of the city was as follows: Historical Center 6.15%, Northern Area 27.24%, Eastern Area 26.28%, South Area 20.57% , West Area 19.77%.

Finally it should be noted that during the period under review (2007-2010) were also recorded a total of 394 No. car parking garage and sold individually.

About No. 484 on the data for the rental agreements should be noted that they refer to different market segments and in particular: 4.96% of apartments consisting of a single room, 49.38% of apartments with two rooms (living room with kitchenette, bedroom and accessories), 23.35% of apartments with three rooms (living room with kitchenette, two rooms and accessories), 14.05% of apartments with four rooms (living room, kitchen, two bedrooms and accessories), 6.40% of apartments with five rooms (living room, kitchen, three bedrooms and accessories), 1, 86% of apartments with more than 6 rooms. On data collected have been initiated different types of analysis, as examples below are presented the results for the determination of the vacancy rate relating to a specific market segment.

4. Vacancy rate

The data bank constituted in Prato consented the calculation of a particularly interesting statistical and estimative market ratio: in the first case it is directed to the study of the dynamics of the real estate market and to its cyclical phases; in the second case the index is important for the evaluation of the market value in the application of the discounted cash flow analysis and of the income approach (since it consents to quantify costs connected to periods of vacancy).

This market ratio is represented by the *vacancy rate* (percentage of all rentable units or space remaining unoccupied).

In the market segment in examination, data has been relatively developed to rented apartments and has concerned the period included between January 2007 and the first six months of 2011 without any interruption. In this case, the sample in survey is composed by 61 data.

The prevalent building typology of the sampled rented real estate concerns little apartments having a living room with a kitchenette, a matrimonial bedroom, a bathroom and a balcony, almost always furnished. We collected statistical data about the date of the start and the expiry of the contract and the date of the new tenancy (Table 1).

Tenancy contracts, registered by the competent public office, can be singularly consulted only if one knows the contracting parties or the references of the contract registration, after a request addressed to the competent public office. However, it is not possible to make surveys about single features because of the privacy protection. Because we do not have sufficient transparency in this method of survey, the only usable method is represented by the direct survey during marketing activities. So, the specific survey schedule has been created for the survey purposes.

The vacancy rate is a function of the typical lease term, vacancy between leases, and the probability of renewal. After the primary lease term expires, units often remain vacant for a certain amount of time, depending on property type and market conditions. This vacancy between leases is referred to as the lag vacancy.

We compared two methods for calculating the vacancy rate, one of which takes into account the probability and the other does not.

The research of the vacancy rate without probability of renewal (V), by the sample data collection in Prato, is calculated as follows:

$$V = \frac{L}{T + L}; \quad (1)$$

where:

T = average length term (months);

L = average lag vacancy (months).

In the sample data collected, the vacancy rate without probability of renewal is 7,49%; the average length term is 20,01 months (standard deviation 11,66 months); the average lag vacancy is 1,61 months (standard deviation 1,96 months); the re-lease is 21,62 months (standard deviation 12,60 months). The average rent is 624,59 euro/month (standard deviation 38,28 euro/month).

The probability of renewal (P) is calculated dividing zero lag units for all units (26/61). The vacancy rate with probability of renewal (V_p) is calculated as follows:

$$V_p = \frac{L \cdot (1 - P)}{T + L \cdot (1 - P)}. \quad (2)$$

In the sample data detected in Prato, the vacancy rate with probability of renewal is 4,44%.

5. Perspectives about the development of the “Prato” real estate data banks

Only through the punctual survey of real estate data, it is possible for valuers to have at disposal adequate market references consenting to writing objective evaluation reports.

From this point of view, our Country is late, because we do not have at disposal punctual and sure real estate data; it exists however the concrete possibility to start the collection and the filing of real estate data according to international standards.

A concrete example of this opportunity is the “Prato” real estate data banks created for the survey of data concerning the urban real estate market.

Collected data are already usable for statistical, economical and appraisal elaborations, like the calculation of the *vacancy rate* about residential rents in a market segment of the city of Prato. It is a market indicator determined by a

Table 1. Computing Vacancy Rates.

U	Start	End	LB	Lenght (month)	Lag (month)	RL (month)	VU %	OU %	Rent €/ (month)	Address
1	10-01-06	02-01-08	02-01-08	24,07	0,00	24,07	0,00	1,00	630,00	Strozzi
2	12-02-07	05-05-08	05-05-08	14,93	0,00	14,93	0,00	1,00	630,00	Montalese
3	11-06-08	09-11-09	09-11-09	17,20	0,00	17,20	0,00	1,00	600,00	Puccetti
4	09-11-09	17-03-10	17-03-10	4,27	0,00	4,27	0,00	1,00	550,00	Baccini
5	01-06-09	24-05-11	24-05-11	24,07	0,00	24,07	0,00	1,00	630,00	Bologna
6	01-04-10	30-06-11	30-06-11	15,17	0,00	15,17	0,00	1,00	600,00	Angiolini
7	01-12-10	12-09-11	12-09-11	9,50	0,00	9,50	0,00	1,00	600,00	A. Billi
8	01-04-06	31-12-07	01-01-08	21,30	0,03	21,33	0,00	1,00	600,00	Accademia
9	01-10-06	14-10-08	15-10-08	24,80	0,03	24,83	0,00	1,00	700,00	Meoni
10	10-10-08	09-03-09	10-03-09	5,00	0,03	5,03	0,01	0,99	550,00	San Giusto
11	31-07-08	30-06-09	01-07-09	11,13	0,03	11,17	0,00	1,00	700,00	Purgatorio
12	01-03-10	30-06-10	01-07-10	4,03	0,03	4,07	0,01	0,99	600,00	Pomeria
13	01-12-08	31-07-10	01-08-10	20,23	0,03	20,27	0,00	1,00	600,00	Cilianuzzo
14	01-04-10	30-09-10	01-10-10	6,07	0,03	6,10	0,01	0,99	580,00	F. Strozzi
15	16-03-09	30-09-10	01-10-10	18,77	0,03	18,80	0,00	1,00	650,00	S.M.d. Pietà
16	01-10-08	28-02-11	01-03-11	29,33	0,03	29,37	0,00	1,00	550,00	B. Buricchi
17	15-05-10	28-02-11	01-03-11	9,63	0,03	9,67	0,00	1,00	600,00	Dei Casini
18	27-02-10	31-05-11	01-06-11	15,27	0,03	15,30	0,00	1,00	600,00	F. Rosselli
19	01-12-10	24-07-11	25-07-11	7,83	0,03	7,87	0,00	1,00	600,00	G. Meoni
20	15-10-07	30-10-08	01-11-08	12,70	0,07	12,77	0,01	0,99	650,00	Ser Leonardo
21	01-01-06	10-03-08	15-03-08	26,63	0,17	26,80	0,01	0,99	600,00	B. Cialdini
22	01-11-06	27-12-10	01-01-11	50,57	0,17	50,73	0,00	1,00	650,00	E. Guevara
23	21-09-06	31-05-07	06-06-07	8,40	0,20	8,60	0,02	0,98	600,00	Gonfienti
24	01-10-07	25-11-08	01-12-08	14,03	0,20	14,23	0,01	0,99	630,00	Bologna
25	28-01-08	31-01-11	07-02-11	36,63	0,23	36,87	0,01	0,99	600,00	Bologna
26	01-10-07	31-08-08	08-09-08	11,17	0,27	11,43	0,02	0,98	580,00	Mazzoni
27	01-04-08	01-09-09	18-09-09	17,27	0,57	17,83	0,03	0,97	620,00	Baccini
28	10-10-08	05-03-09	01-04-09	4,87	0,90	5,77	0,16	0,84	550,00	Puccetti
29	01-07-06	04-01-07	01-02-07	6,23	0,93	7,17	0,13	0,87	610,00	Filicaia
30	04-02-08	31-01-11	01-03-11	36,40	0,97	37,37	0,03	0,97	630,00	E. Guevara
31	26-01-07	01-07-08	31-07-08	17,40	1,00	18,40	0,05	0,95	700,00	Purgatorio
32	01-03-07	31-05-09	01-07-09	27,40	1,03	28,43	0,04	0,96	600,00	Di Gonfienti
33	15-02-08	10-02-09	16-03-09	12,03	1,13	13,17	0,09	0,91	650,00	S.M.d. Pietà
34	01-06-10	02-03-11	05-04-11	9,13	1,13	10,27	0,11	0,89	650,00	Genova

(Continued)

U	Start	End	LB	Lenght (month)	Lag (month)	RL (month)	VU %	OU %	Rent €/month	Address
35	30-05-07	28-07-08	01-09-08	14,17	1,17	15,33	0,08	0,92	640,00	Bologna
36	01-07-05	25-09-06	01-11-06	15,03	1,23	16,27	0,08	0,92	650,00	E. Guevara
37	15-03-08	31-01-09	20-03-09	10,73	1,60	12,33	0,13	0,87	630,00	Parrini
38	28-03-07	13-05-08	01-07-08	13,73	1,63	15,37	0,11	0,89	650,00	Pomeria
39	02-12-06	04-10-08	01-12-08	22,40	1,93	24,33	0,08	0,92	650,00	Cilianuzzo
40	01-12-08	01-10-09	01-12-09	10,13	2,03	12,17	0,17	0,83	630,00	Galilei
41	07-09-06	30-01-08	01-04-08	17,00	2,07	19,07	0,11	0,89	670,00	Puccetti
42	15-10-08	30-09-10	01-12-10	23,83	2,07	25,90	0,08	0,92	650,00	G. Meoni
43	02-01-08	30-11-09	03-02-10	23,27	2,17	25,43	0,09	0,91	630,00	Filicaia
44	01-03-09	18-03-10	01-06-10	12,73	2,50	15,23	0,16	0,84	600,00	Iole Badioli
45	25-06-07	15-07-09	01-10-09	25,03	2,60	27,63	0,09	0,91	600,00	Venezia
46	01-08-05	02-01-09	01-04-09	41,67	2,97	44,63	0,07	0,93	650,00	Delfini
47	01-03-08	01-12-08	01-03-09	9,17	3,00	12,17	0,25	0,75	650,00	Bologna
48	01-06-07	31-01-10	01-05-10	32,50	3,00	35,50	0,08	0,92	670,00	Purgatorio
49	12-03-07	31-12-09	01-04-10	34,17	3,03	37,20	0,08	0,92	650,00	F. Strozzi
50	31-08-06	29-12-09	01-04-10	40,53	3,10	43,63	0,07	0,93	650,00	Strozzi
51	08-01-10	23-05-11	02-09-11	16,67	3,40	20,07	0,17	0,83	650,00	Della Zecca
52	20-03-09	19-03-10	01-07-10	12,13	3,47	15,60	0,22	0,78	600,00	Panconi
53	12-05-06	15-04-08	01-08-08	23,47	3,60	27,07	0,13	0,87	700,00	Venezia
54	12-02-07	12-02-11	01-06-11	48,70	3,63	52,33	0,07	0,93	600,00	San Giusto
55	26-09-06	08-07-09	01-11-09	33,87	3,87	37,73	0,10	0,90	580,00	Accademia
56	01-07-08	30-10-09	01-03-10	16,20	4,07	20,27	0,20	0,80	620,00	Arcangeli
57	01-09-08	01-04-10	01-08-10	19,23	4,07	23,30	0,17	0,83	640,00	Bologna
58	31-10-06	30-06-09	01-12-09	32,43	5,13	37,57	0,14	0,86	550,00	S. Giorgio
59	01-08-05	31-03-09	10-10-09	44,60	6,43	51,03	0,13	0,87	650,00	S.Fabiano
60	10-02-06	01-04-07	15-10-07	13,83	6,57	20,40	0,32	0,68	650,00	Mazzoni
61	28-12-05	01-04-09	01-01-10	39,67	9,17	48,83	0,19	0,81	700,00	Venezia

U = Unit; Start = Primari lease term; End = Date of lease term exiperes; LB = Last lease date.
 Lenght = Typical lease term (months); Lag = Lag Vacancy (months). Below 0,5 rounded to zero.
 RL = Re-Lease the interval between start date and Lease back date (months); VU = Vacancy, Lag per Unit; OU = Occupancy percent per unit.

method and a detail level which is not present in the statistical panorama of Italian real estate sector.

In future data surveys will go on along to this traced path, extending this activity also towards real estate having productive destination. In fact, the punctual availability of data and the of the real estate market offer the opportunity to get a new knowledge in the revealing the real estate market in order to make it more understandable.

Bibliography

- Berloco A.D., Grittani G. (1989). La comparazione quale presupposto logico dei giudizi di stima. *Genio Rurale* 9: 37-44.
- Dreyer B. J., Mathieson K. (1995). Ensuring Consistency in the Estimation of Vacancy Rates. *The Appraisal Journal* April: 209-212.
- Grillenzoni M. (1970). La "banca dei prezzi" per una maggiore trasparenza del mercato fondiario. *Genio Rurale* 5: 21-25.
- Grillenzoni M. (1971). Criteri organizzativi ed operativi della Banca dei Prezzi. *Il Dottore in Scienze Agrarie* 8: 8-16.
- Grillenzoni M., Bazzani G.M. (1988). La "banca dei prezzi": sistema integrato di rilevazione ed analisi della dinamica fondiaria. *Genio Rurale*. 9: 11-16.
- International Valuation Standards Committee (2011). *International Valuation Standards*. IVSC, London.
- Simonotti M. (2006). *Metodi di stima immobiliare*. Palermo. Dario Flaccovio Editore.
- Simonotti M. (2011). *Valutazione Immobiliare Standard*, Mantova, Stimatrix Editore.
- Simonotti M., Ciuna M. (2011). Linee guida per la rilevazione dei dati del mercato immobiliare. *Geocentro* 15: 86-93.
- Tecnoborsa (2011). *Codice delle Valutazioni Immobiliari III*. Tecnoborsa, Roma.

