

# A proposal for a synopsis in real estate appraisal between the Italian doctrine and international valuation standards

Benedetto Manganelli\*

*key words:* principles of appraisal, value theory, real estate market, economic aspects, estimation procedures, fair value

## Abstract

*The push towards standardization of the evaluation methodology in the real estate market, due to the publication of International and European codes, has undermined the theoretical structure of the Italian tradition of real estate appraisal. Compared to the empiricism of these codes, which is perhaps excessive, some principles of the Italian discipline, which have a rigid theoretical approach, and with a purely deductive logic, appear inconsistent. This work highlights the*

*differences between the two methodological approaches, the Italian doctrine, and the one codified in international standards. Through a proposal for a summary, it attempts to fill the gaps and harmonize inconsistencies, placing itself as a stimulus to the academic world for a future disciplinary debate that could produce a common language and shared principles.*

## 1. INTRODUCTION

Due to some external factors, the Italian academic community that deals with real estate Appraisal, has, for some years, embarked on the road of internationalization, abandoning in a definite manner those national borders, to which it has often been relegated. This is perhaps due to the conviction about the strong link between this discipline and social institutions, or simply because language was a barrier against a wider debate, fusion and synthesis of different thoughts.

Currently in Italy, all researchers and scholars of the discipline need to compete even with the outside world. Although recent research mainly deals with the more practical aspects of the matter, however, it is essential to use a common language that starts from shared theoretical principles.

The need to align its approach to the international environment, as outlined by the introduction of valuation standards (European Standard of real estate valuation in 2007, RICS Valuation Standards 2007 International Valuation Standards 2011), has become a key issue for the Italian Academy of Real Estate Appraisal.

In view of the very stiff theoretical framework of Real Estate Appraisal, as developed in Italy, the international valuation standards, however, have adopted the strongly empirical Anglo-Saxon approach.

While recognizing the fundamental role of the application phase, it is also true that the intellectual escapism beyond the already known limitations, that this study tries to stimulate, can be considered as scientific research. The proposed deductive-inductive logic of the theoretical development has its origin precisely in this double

significance of the research. Probably, as recognized by other authors (Medici, 1953; Misseri, 1977), the purely deductive investigation that has characterized the development of estimation discipline in Italy, constituted its greatest limitation.

In turn, the excessive empiricism and the prevalence of an inductive approach, as proposed by international standards without a body of doctrine that affirms the principles of general validity and the generalizability of theoretical propositions, risks becoming a “set of precepts”. This, compared to the evolution of social and regulatory framework and the subsequent progress of new “case studies”, would involve the continuous updating of the same standards.

In the following paragraphs the theoretical approaches of the two schools, the Italian and the Anglo-Saxon, are described and compared by highlighting the differences.

The final part of this paper tries to reinterpret some principles of the Italian tradition of real estate appraisal in order to build a synthesis of these differences, so as not to be a subtraction but a completion of the gaps and correction of inconsistencies.

## 2. DISCUSSION

### 2.1 The Italian School

In Italy, Real Estate Appraisal has ancient origins. This discipline takes on a well-defined physiognomy around the middle of the last century. Important contributions to the formation of the principles of estimation theory, as it is taught in many schools and universities today, were provided by Serpieri (1917, 1946), Malacarne (1960), Medici (1945, 1955) Famularo (1947, 1959), Di Cocco (1960), Lo Bianco (1961) and Forte (1968). Famularo and Forte, in particular, were the first authors who transferred the theoretical framework from the agricultural sector, to which it has been traditionally linked, to the urban environment.

Medici, Famularo and Lo Bianco introduced the concepts of “estimation criteria” and “economic aspects” of the property into the body of the discipline. The concepts best specify a universally recognized principle (by the Anglo-Saxon school as well), according to which the value depends on the purpose of the estimate. In particular, the Italian school states that once the purpose for which the estimate is required, is known, the criteria, by which to observe the economic aspect of the asset to be evaluated, is uniquely identified, which in turn translates into the sought value.

Estimation criterion means a way of looking, an observation point, which corresponds to a profile, a perspective, an aspect of the asset. The aspect of the asset is the economic characteristic which one wants to estimate, predict its magnitude. When the purpose of the estimate varies, then the criterion varies and consequently

the value. After a long debate, the fundamental requirements of the economic aspects were clarified and identified in 5 points: two fundamentals (the market value and the cost value) and three derivatives (depreciated replacement cost, complementary value, transformation value). (Malacarne, 1960; Forte, 1968; Famularo, 1943, 1969 and 1975; Morano, 1972; Grittani, 1989; Grillenzoni, 1974).

Once the economic aspect is identified, the next step is the choice of the procedure. This choice depends on the availability of data and on the technical, economic and legal characteristics of the asset. The estimate of the market value, as well as the cost value, can be calculated with a direct or indirect approach. The direct approach implies that the comparison is developed on the basis of elemental data which constitutes the economic characteristic (the price or cost) of assets which are analogous, as regards their intrinsic and extrinsic features, to the property of which one wants to predict the magnitude of the same economic characteristic (the market value or the cost value).

All other estimation approaches belong to the category of indirect procedures. In particular, the traditional estimation theory, in Italy, teaches that all other economic aspects, different to the market value, may become indirect procedures for the estimation of the latter. This assumption bases its foundations on the economic principle that in perfect competition in the long-run equilibrium, the developer's profit is zero. Thus, for example, the transformation value may become the estimation procedure of the market value of a building plot, or the cost value may become the estimation procedure of an industrial shed.

In these cases, what distinguishes the transformation value or cost value as economic aspects rather than estimation methods of the market value, is the profit, obviously non-zero, bearing in mind that the property market is not perfectly competitive.

It is the market imperfection that does not make the different values or economic aspects of a property equivalent. If the transformation values or cost values are used as procedures, one must assume that the transformation and / or construction are carried out by an ordinary developer, the one that is considered statistically normal (Di Cocco, 1960; Medici, 1967; Forte, 1968; Simonotti, 1997). Assuming that one can build an indicator that represents the behaviour of developers and that such distribution is a normal (Gaussian) distribution of frequency, the ordinary developer is the one that is closer to the average and not beyond the standard deviations.

Focusing on derived economic aspects, it should also be said that the transformation value, as a generally valid valuation judgment accepted by the generality of market players, is either poorly implemented, or not implemented at all. In practice, its application as an estimation criterion or economic aspect is confined to the expression of judgments of economic advantage, an assessment that is specifically valid and constructed with

reference to a particular developer who has an economic ability and risk appetite that does not necessarily coincide with those of normal ordinary developers.

For example, it may occur that a particular developer asks the evaluator an analysis on the convenience to perform one kind of transformation rather than another. The outcome does not depend solely on the type of transformations being compared (probably not ordinary), but also on the characteristics of who carries them out. Other considerations relate to the complementary value and the replacement value. In particular, the complementary value (whose research is typical in the case of a partial compulsory purchase) represents the value of a part of a complex, or the value of an asset that has a complementary relationship with other goods or portions. Its value in certain circumstances, and for a particular purpose of the estimate, can therefore be sought as the difference in the market value of the whole, including the asset valuation and the market value of the remaining portion (the whole excluding of the part in evaluation). Even in this case, the evaluation responds to particular needs, namely conditions that do not involve only the characteristics of the asset in itself, but it should often refer to the ownership structure, to a character that is subjective and not objective<sup>1</sup>.

However, in discussing the replacement value, the theory defines it as the market value or the cost of an asset equivalent, to certain ends, to the property to be evaluated. Its research is necessary, for example, in the sale of an asset that is part of a whole, either for tax or accounting purposes (etc.), when the property does not have a market because it is not normally the subject of sale, or when it is not reproducible. It becomes estimation criterion, that is, it defines an autonomous economic aspect, when the technical equivalence, to which it refers in relation to the estimation purpose, regards characteristics of the complex of which it is functional, and the way in which they have been determined by those who manage or own it<sup>2</sup>.

In these cases, it is a subjective judgment. In all other cases, the replacement value intervenes in practice as a technique for the estimation of assets of which the

economic aspect that meets the purpose (the market value or the cost value) is not visible (Manganelli, 2011).

From this discussion, it is clear, therefore, that the economic aspects, called derivatives (the transformation value, the complementary value and the replacement value), can be identified as such if they are an expression of subjective judgments, otherwise they end up being the estimation procedures.

In leaving any further consideration to the following paragraphs, it is clear that in the Italian doctrine, the stages of the assessment phase are, in order: first the identification of the criteria and subsequently the economic aspect to be searched depending on the purpose or practical reason of the estimate, and then the choice of the procedure according to the characters of the property and the available data.

## 2.2 The Anglo-Saxon school and international standards

The history of the evolution of the Real Estate Appraisal in the Anglo-Saxon world is just as ancient. Its origins are to be found in the Old World (England). The roots of this discipline are less ancient in the US, where it has taken on its own characteristic. The first North American authors who dealt with Appraisal are Ely and Morehouse (1924), Fisher (1923) and Babcock (1924), (cfr. Miller and Markosyan, 2003).

Right from the start, however, the differences between the two schools are obvious. If, on the one hand, the similarities are evident with regards to some basic principles of the discipline, such as the uniqueness of the estimation method and the purpose as the guiding element of the estimation process, on the other hand the differences on the issue concerning the notions of economic aspect and of estimation procedures, are equally obvious (Hyder, 2007). In American literature, there is no concept of economic aspect. The American School deals only with procedures or approaches and it encodes only three: market-data (comparison) approach, cost approach, income approach (Babcock 1968 Hodges 1993). These take on the connotations both of the economic aspects and of the procedures. The three economic aspects recognized by the Italian literature and derived from the fundamental ones (value of transformation, complementary value and replacement value) do not exist in American literature, or rather, as it will be shown later, they are not the only ones. In addition, the distinction between economic aspect and procedure is lacking in the judgment estimation phases.

Since the beginning, the American School, has adopted a less rigid structure of the process estimate, strongly oriented towards a very practical approach. The definition of value changes in relation to practical needs. The value definitions become so numerous. Each individual (real estate agent, lender, courts, tax agency, etc.) provides a specific shade of the value conditioned by the physical,

<sup>1</sup> "It is true that from a purely theoretical point of view the problem would be equally soluble applying the criterion of ordinary complementarity; that is, making reference to the way used by the generality of entrepreneurs, when they attribute to the good the ordinary destination. However, this subtle consideration is devoid of practical content, because the complementary price may be applied only in cases in which the complementarity with the good to be estimated is clear, pre-established, and relevant" (Medici 1967, p. 13-14).

<sup>2</sup> Medici explains it well (1967 p. 11) when he describes the estimation of fertilizer on a farm, at the end of its lease in the definition of the relationship between property owner and tenant.

economic, and legal characteristics of the property and even more so by the attitude or by the goals of those who express the judgment. This empirical approach, in the second half of the 1900s, suffered criticism from the academic world (Ring, 1965; Ratcliff, 1965 and 1972a). According to the latter, and in agreement with the Italian disciplinary framework, the relationship between the value and the decision-making process implying the request of the valuation is an essential issue (Ratcliff, 1972b). Ratcliff believes that problems such as buying, selling, lending and taxation require the search for the most probable selling price. The cost approach and the income approach are therefore downgraded because, according to the author, they do not reflect the actual attitude of the market players. Again, however, the concept of economic aspect is not distinct from that of the estimation procedure.

It is a methodological approach that nonetheless obtains success and widespread recognition by the American culture. The market approach becomes the highpoint of a hierarchical scheme, thus taking precedence over other procedures (those related to income or cost) which intervene only if the market approach itself, due to lack of adequate information (number and quality of data on comparables), was not usable (Lusht, 1981, 1983 and 1997).

In sum, and simply speaking, we can say that the Anglo-Saxon approach connects the chosen economic aspect or procedure (considered coincident), to the objective character of the asset and to the subjective character of those interested in the estimate. When there is a greater distance from an ideal condition (adequate number and quality of data, on comparables) for the search of the most probable market price, then there is a greater need to use different procedures. These are selected in relation to the decision-making process to be simulated, which must represent the value creation process.

### 2.3 The inconsistencies between the two methodological approaches

What is lacking in the Anglo-Saxon approach, which is conditioned by a strong empirical approach and is incapable of a generalization of the principles, is therefore that complex theoretical framework that characterizes the Italian school which, in turn, is probably constrained by an overly schematic structure. One of the principles shared by the two schools is, certainly, what uniquely connects the value to the purpose of the estimate. In other words, the same property, with reference to a certain time and place, may present different values at the same time; the value to search for, depends on the purpose for which the valuation is required.

The Italian tradition in Real Estate Appraisal identifies only five possible values that call on economic aspects, trying to attribute to them all other valuation approaches, which are therefore considered estimation procedures, i.e. different ways to arrive at one of the recognized aspects

(Manganelli, 2015). This is the case of the income approach that allows to determine the market value with an indirect approach.

Instead, international standards, that are consistent with the Anglo-Saxon statement, regardless of the distinction between the estimation criteria and procedures, distinguish the market value and those that are different from this. A long list belongs to the set of values different from the market value, much longer than the four economic aspects that the Italian tradition distinguishes and identifies as non-overlapping at market price. Along with the transformation value (to which the concepts of “highest and best use” and of “value in use” can be attributed; Dotzour *et al.*, 1990; Boyce, 1975<sup>3</sup>), the complementary value (also known as synergistic value) and the replacement value (which includes the “depreciated reproduction cost”; Manganelli, 2011), there are also, the “investment value”, the “special value”, the “mortgage lending value”, the “insurable value”, the “salvage value”, the “liquidation value or forced sale value”, and the “taxable value”.

Ring (1965) lists a long list of definitions of values reported by the US estimation discipline (which to some extent reflects those recognized by international standards today) and in investigating the causes of such proliferation identifies two: the economic and legal physical characteristics of the assets and the subjective behaviour of those interested in the evaluation. According to the author, the only objective judgment is the market value. Note that the term ‘objective’ in the present case has the meaning of not related to a particular customer concerned with the estimate. This concept must be distinguished from the one concerned to the objectivity of the judgments, that is always a valid principle according to which the judgment must be free from personal influences of the evaluator.

One must begin from here in order to highlight what distinguishes the Italian school from the Anglo-Saxon one and, therefore, from the international standards valuation. The Italian school distinguishes between the generally valid judgment (also known as estimate) and specifically valid judgment (usually called economic) to which all economic assessments which are not constructed with reference to the majority of market players belong, but that respond to a specific question of a particular individual for a particular purpose.

In order to consider the judgment as generally valid, it is crucial that it respects the principle of ordinariness. It should however be noted that this principle, with reference to the Italian tradition of estimates, has a broader and deeper meaning than that reported in the

<sup>3</sup> “In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use”, p. 27.

“Codice delle Valutazioni Immobiliari” (2002). This Code, promoted by many associations and organizations that deal with Valuation, but not by the academic world, is an attempt to define an evaluation methodology to offer Italian expert evaluators in line with international standards. It confines the judgment formulated in accordance with the principle of ordinariness to statistical significance and in line with the Anglo-Saxon approach (Kummerow, 2002), i.e. as the best probable one, that coincides with the average value of the normal distribution (or Gaussian) of possible estimates.

On the other hand, for the value to be statistically the most probable (and this is the objective to be achieved, although not verifiable, and certainly not interpreted as the result of an average of values that do not exist) it is in fact logical that those who express it, will do so hypothetically, for example: a) in the case of estimate of the market value using the income approach, the income to be capitalized is what the property would receive if it were in the availability of an ordinary owner, b) in the case of estimate of the cost value, the hypothesis is that the contractor who is responsible for building is ordinary, that is, he has a normal economic and financial capacity, or c) in the case of the estimate of the transformation value, the transformation is developed by an ordinary developer, etc.

Ordinariness is something that should characterize those who carry out actions and generate economic facts (costs, income, prices etc.), that are at the basis of the assessment. Finally, to conclude this parenthesis about the practical significance of the principle of ordinariness, when the market value is estimated using the direct approach, the comparable prices will have to be ordinary. In practice it is necessary to assume that the known prices have been formulated under normal conditions between the demand (buyers) and the supply (sellers) and that they have acted independently, not conditioned and were well informed. Not having information on how the prices recorded on the market were realized, the only way to use them in the estimate, while respecting the principle of ordinariness, is to calculate the central values. The estimate reference becomes the average value, because the hypothesis that they are statistically distributed according to the Gaussian distribution is valid.

## 2.4 The synopsis of the differences

In order to overcome the excessive theoretical schematics of the Italian doctrine compared to the more empirical international valuation standards, this work offers the following synopsis:

Real Estate Appraisal deals with assessments that may become prices (Forte, 1968). The valuation principles are four and not five as in the Italian tradition (Forte and De Rossi, 1974; Simonotti, 1997). They are:

1) The estimation method is unique and is based on comparison (Grittani and Berlocco, 1989).

2) The value depends on the purpose of the estimate (Famularo, 1943).

3) The price is the basis of the estimate (Medici, 1955).

4) The forecast is an immanent characteristic of the judgment value (Famularo, 1969).

The principle of ordinariness (the fifth) no longer exists, at least in general terms.

It intervenes only in cases where the expression of a generally valid judgment is required.

In practice, generally valid judgments, i.e. shared by most operators in a particular market because they do not relate to the specificity of those requesting the evaluation, can only come about in cases of estimated market value or estimated cost value. Whereas there is not a different interpretation for the former, for the cost value the expression of a subjective judgment is also conceivable, one that is calibrated on the specific nature of those requesting the estimate. For example, as in the case of the estimate of the construction costs that the contractor makes to define the maximum discount to be applied to a tender whose starting price has been established with an ordinary estimate of the cost. The market value and the cost value are the two main economic aspects considered by the Italian doctrine. Other economic aspects, as already mentioned, are only theoretically identifiable as estimation judgments, thus generally valid, based namely on the ordinariness theory. In practice, when they are not estimation procedures, they are the expression of subjective judgments: the transformation value is normally required as the judgment of economic advantage formulated for persons who have particular economic characteristics and aptitudes; the complementary value must take into account of the ownership structure (i.e. in the case of partial compulsory purchase of an agricultural land its estimate must take into account the entire plot, which in turn can consist of more cadastral parcels); the replacement value, when it is used as an economic aspect, is constructed with reference to a particular technical and functional equivalency that also takes into account subjective characteristics. Thus it becomes logical to consider the economic aspects, so-called derivatives, typical of the Italian tradition of estimates - namely the transformation value, the replacement value and the complementary value - similar to the set of values that in addition to or as a complement to these, are also considered by international standards. All these are economic aspects which when not used as procedures, do not overlap with one another or with the two main ones. They may be the purpose of the research if the evaluator is requested to give a subjective judgment. Let's bear in mind that the term “subjective” does not refer to an expression influenced by the personality of the evaluator, but to the particular economic and financial characteristics of the applicant for evaluation and, therefore, it regards a judgment that is not bound to the principle of ordinariness.

Moreover, for these types of judgment the concept of

economic aspect coincides with the estimation procedure; this could justify the failure to differentiate between the two concepts in international standards. A difference that, instead, is appropriate to maintain if reference is made to the two main economic aspects: the market value and the cost value. In this case, if the purpose of the estimate defines these aspects as being assessed, one can reach them with different approaches or procedures. The expression of the method, which is always based on comparison, can namely take place in different ways. These are categorized in direct or indirect procedures. Within these two categories, the choice of procedure can be further refined. For example, in the case of the direct estimation of the market value, one can select a deterministic or probabilistic approach, or in the case of indirect estimation, one can use the cost approach, the transformation value or the income approach that are, or become, estimation procedures. In practice, what guides the choice of the most appropriate procedure is, on the one hand, the availability of market data, and on the other the economic, legal and physical characteristics of the property being valued.

### 3. CONCLUSIONS

At the end of the discussion in the debate, a different theoretical framework is offered that on the one hand tries to overcome the rigidity of the Italian doctrine and on the other the excessive pragmatism of international standards.

The basic premise is that a value judgment is the prediction of the magnitude of an economic characteristic and that the economic characteristics as opposed to the physical ones, are not intrinsic to an asset (weight, volume etc.) but belong to the social sphere, i.e. they are economic facts. The economic aspects understood as profiles of the same property, can therefore be generally shared or they can reflect the subjectivity of the observer.

So, the purpose of the estimation unequivocally identifies the point of view (common to most players, or subjective) and therefore the economic aspect that is to be estimated.

There are two fundamental economic aspects (or values): the market value and the cost value. They are objective economic aspects whose 'image' is visible in the same way to the majority of the market participants. The estimate of these values must consider, together with the ever valid principles (four from the list mentioned in the preceding paragraph), also the principle of ordinariness. The latter is, however, optional for the cost value that for certain purposes might also become an expression of a subjective judgment. In the latter case, it responds to a specific valid assessment. Although subjective, it is still an economic aspect of the asset. Likewise, there are many other economic aspects or values that are the result of numerous subjective judgments. Very often they coincide with the approaches or procedures used to calculate them.

All these subjective values, indeed different from the

market value (or cost value) can be listed as possible connotations of a single concept: the *fair value*. The expression is obviously Anglo-Saxon, and is defined as a rational and unbiased estimate of the price of an asset or service, taking into account factors such as the scarcity, utility, risk, cost of production or replacement, i.e. all those constituent elements of the theory of value. The term originated in the 18th century in the insurance field in order to establish fair and equitable insurance premiums. It then moved to the financial world, in the fundamental analysis of the stock market, it is the equilibrium price. It has ultimately become the key word in international accounting standards (International Accounting Standards, IAS). According to these principles (IAS 32), it is the amount for which an asset could be exchanged, or a liability extinguished in a current transaction between knowledgeable and willing parties. It is a fundamental principle, integrative or even alternative to the historical cost principle, in the assessment of assets and liabilities to be included in the financial statements, to report to shareholders and potential investors and for the purpose of preventive and subsequent control by the authorities of market regulations and supervision.

The *fair value* has also been introduced to the field of real estate valuations. The latest edition of the International Valuation Standards (IVS 2007), clearly distinguishes the *fair value*, as understood in real estate appraisal, from the other definitions that belong to different disciplines. It represents the value of real estate shared by two specific parts that take into account the respective advantages or disadvantages that each will gain from the transaction. Given the original meaning of the term, even when the estimate is not aimed at the transaction, and thus the prevailing interest in the estimate is of only one part (eg. insurance company, tax office, investor, financier for granting a loan) we could continue to talk about *fair value*.

All economic aspects (values) of a subjective type (valid specifically) already listed in international and European valuation standards, can therefore be considered as examples of *fair value* or at least categorized in this macro definition. They are thus the "value in use", the "investment value", the "special value", the "mortgage lending value", the "insurable value", the "salvage value", the "liquidation value", the "taxable value" and with them, to integration or alternatively, the value of transformation, the complementary/synergistic value and the replacement value.

Other shades of fair value are possible although it is difficult to encode them with a different name. Trying to encode these additional and different shades of the fair value, could generate the already highlighted error, of transforming the doctrine in a "set of precepts". Solely as an example, hereunder the case of a shade of the concept of fair value that does not fall under the aforementioned list of values, is illustrated. This is the case of a property

that is subject to a compulsory purchase and for which the beneficiary (perhaps a private individual) is willing to acquire the asset in amicable agreement rather than proceed with a forced acquisition. In this case, albeit with some anomaly, it is similar to the bilateral monopoly market (Manganelli, 2016).

There is no doubt that during the negotiations the beneficiary has the greater bargaining power; however, the failure of a deal could involve some risk, be it higher or lower in relation to the specific case. Although today the compensation required by law to expropriate coincides with the market value of the property, it is possible that the final value determined as the outcome of a court judgment is far from that which is expected by the parties. This might occur, for example, for a different

interpretation of the significance of the urban constraint or because the interested parties provide different assessments of the probable income resulting from the property transformation. The equilibrium price and thus the value that lies behind it certainly cannot be considered a market value but a fair value, shared by two specific parts that take into account the respective advantages or disadvantages that each will gain from the transaction. The discussion, even if only illustrative, and the probably still unripe conclusions, drawn because of the inadequacy of who proposes them, could be the momentum for further developments of the doctrine addressed to the codification of an estimation methodology also shared in an international context and that does not leave behind what is useful of the typical theoretical approach of the Italian tradition.

\* **Benedetto Manganelli**, School of Engineering - University of Basilicata.  
e-mail: [benedetto.manganelli@unibas.it](mailto:benedetto.manganelli@unibas.it)

## Bibliography

- BABCOCK F.M. (1924), *The appraisal of Real Estate*. Macmillan, New York.
- BABCOCK H.A. (1968), *Appraisal Principles and Procedures*, Richard D. Irwin, Homewood, Illinois.
- BOYCE B.N. (1975), *Real Estate Appraisal Terminology*, (ed.) Bullinger Publishing Company, Cambridge.
- DI COCCO, E. (1960), *La valutazione dei beni economici*, Calderini, Bologna.
- DOTZOUR, M.G., GRISSOM, T.V., LIU, C.H., PEARSON, T. (1990), *Highest and best use: The evolving paradigm*, Journal of Real Estate Research 5(1), 17-32.
- ELY R.T., Morehouse E.W. (1924), *Elements of Land Economics*, Macmillan, New York.
- FAMULARO N. (1943), *Della variabilità del valore con lo scopo della stima e di un possibile sesto criterio di stima*, Rivista del Catasto e dei Servizi Tecnici Erariali 10(3).
- FAMULARO N. (1959), *Sull'autonomia ed il contenuto dell'Estimo*, Rivista del Catasto e dei Servizi Tecnici Erariali 14(2), 108-130.
- FAMULARO N. (1969), *Teoria e pratica delle stime*, Unione tipografica, Torino.
- FAMULARO N. (1975), *Ancora sul valore complementare e la casistica espropriativa*, Genio Rurale, 38(4), 19-20.
- FAMULARO N. (1947), *La stima dei fabbricati*, Calderini, Bologna.
- FISHER E.M. (1923), *Principles of Real Estate practice*, Macmillan, New York.
- FORTE C. (1968), *Elementi di estimo urbano*, Etas Kompass, Milano.
- FORTE C., DE ROSSI B. (1974), *Principi di economia e estimo*, Etas libri, Milano.
- GRILLENZONI M. (1974), *Il valore complementare nella problematica espropriativa*, Genio Rurale, 37(10), 25-30.
- GRITTANI G, BERLOCCO A.D. (1989), *La comparazione quale presupposto logico del giudizio di stima*, Genio rurale 52(9), 37-44.
- GRITTANI G. (1989), *La caratterizzazione dei valori d'interesse estimativo*, Genio Rurale 52(4), 17-27.
- HODGES M.B.J. (1993), *Three approaches?*, Appraisal Journal 61, 553-564.
- HYDER K. (2007), *The Appraisal Process*, Appraisal Journal 75(3), 227-235.
- INTERNATIONAL VALUATION STANDARDS COUNCIL (IVSC) (2011), *International Valuation Standards*, London.
- KUMMEROW M. (2002), *A statistical definition of value*, Appraisal Journal 70(4), 407-416.
- LO BIANCO G. (1961), *Estimo*, Vol. I, Editore Urlico Hoepli, Milano.
- LUSHT K.M. (1981), *Data, the Appraisal Process, and the Market Value Definition*, The Appraisal Journal 10, 534-546.
- LUSHT K.M. (1983), *Most Probable Selling Price*, Appraisal Journal, July, 346-354.
- LUSHT K.M. (1997), *Real Estate Valuations Principals and Applications*, Irwin, Homewood, Illinois.
- MALACARNE F. (1975), *I principi scientifici dell'estimo*, Genio Rurale 38(1), 11-21.
- MANGANELLI B. (2011), *Il deprezzamento degli immobili urbani*, Franco Angeli, Milano.
- MANGANELLI B. (2015), *The loss in value of land due to renewed planning restrictions introduced prior to com-*

[  
*pulsory purchase. L'interpretazione estimativa del valore mancato nella stima del danno da reiterazione del vincolo preordinato all'esproprio*, Journal Valori e Valutazioni 14, 41-46.

MANGANELLI B. (2016), *The Break-Even Point of the Utilities in the Real Estate Market of Bilateral Monopoly*, International Journal of Applied Engineering Research 11(8), 5395-5399.

MEDICI G. (1945), *Lezioni di estimo*, Zanichelli, Bologna.

MEDICI G. (1953), *Principles of appraisal*, Vol. X, The Iowa State College, Iowa.

MEDICI G. (1955), *Principi di estimo*, Edagricole, Bologna.

MEDICI G. (1967), *Elementi di estimo civile rurale e catastale*, Calderini, Bologna.

MILLER N.G., MARKOSYAN S. (2003), *The academic roots and evolution of real estate appraisal*, Appraisal Journal, 71(2), 172-184.

MISSERI S.C. (1977), *La scienza estimativa nel quadro della moderna dinamica economica e sociale: lineamenti e tendenze*, VII incontro di Estimo. Centro Studi di Estimo, Firenze.

MORANO N. (1972), *Il valore comprensoriale in alcune sentenze della giunta speciale di Napoli*, Edagricole, Bologna.

Osmi Borsa Immobiliare, Politecnico di Milano, ISIVI (2007), *Standard europei di valutazione immobiliare*, Franco Angeli, Milano.

RATCLIFF R.U. (1965), *A neoteric view of the appraisal function*, Appraisal Journal 35(2), 167-175.

RATCLIFF R.U. (1972a), *Is there a "New School" of Appraisal Thought?*, The Appraisal Journal 4, 522-528.

RATCLIFF R.U. (1972b), *Valuation for Real Estate Decisions*, Democrat press, Santa Cruz.

RING A.A. (1965), *The labyrinth of value*, Appraisal Journal 33(1), 9-12.

ROYAL INSTITUTION OF CHARTERED SURVEYORS (RICS) (2007), *RICS Valuation Standards*, 6th Edition., Cromwell Press, Trowbridge, Wiltshire, UK.

SERPIERI A. (1917), *Il metodo di stima dei beni fondiari*, M. Ricci, Firenze.

SERPIERI A. (1946), *Nuovi contributi alla teoria delle stime*, Rivista di Estimo Agrario e Genio Rurale, 9 (1).

SIMONOTTI M. (1997), *La stima immobiliare: con principi di economia e applicazioni estimative*, UTET libreria, Torino.

TECNOBORSA (2002), *Codice delle valutazioni immobiliari: Italian property valuation standard*, Technical report, Roma.