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Exogenous factors and market value: an appraisal model of capital gains in urban redevelopment programs in public/private partnerships*

The proposed article aims to illustrate an experimental model applicable, in the planning stage, to an appraisal of the capital gains in a residential requalification in public/ private partnership. The model develops a method using a conventional cost value through a multicriteria model which evaluates the influence of qualitative exogenous variables to the market value of the property.

The aim is to develop a synthetic procedure, transparent, shared and easy to use by the public authorities, in determining the total benefits associated with urban transformations, in order to achieve a fair sharing of profits between public and private entities.

1. Introduction

The so-called “Integrated Programs” or “Complex Urban Programs” (PUC), since the 1990s, have become an innovative mode of action for redevelopment of cities and, more generally, for the governance of urban and territorial transformations.

The present period of economic difficulty, which in many situations also affects the real estate market, raises questions about the prospects for planning, as well as equalization, because the demand for construction rights, to which they provide answers, just recently seems to be undergoing a significant reduction.

The procedure described in this paper, therefore, becomes also a hope that in future the scientific community may be able to face these issues.

2. The reference context

The pursuit of aims of redevelopment and urban regeneration in the Complex Urban Programs is, of course, through public / private partnership, in which cooperation between public and private operators hinges on one central issue: the quality of urban life, here understood as “appropriate”, providing equipment and

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facilities, adequate to the present demand, in terms of quality and quantity, of the population that resides in the areas which are to be redeveloped (Ombuen et al., 2000). This new sense of “urban standard” led to experimentation on so-called “additional standards” or standards of quality laid down: the private proposer, who participates in a program, in fact, is committed, in addition to paying charges by law, to increasing also the provision of services, through monetary contributions, sale of areas, construction of infrastructure and management services (Stanghellini & Mambelli, 2003).

Given the complexity of this process, each program must be constructed having as its objective the “public interest” and “public utility”, obtainable through the participation of both public and private persons or entities, sometimes even conflicting within their respective spheres of activity.

In these contexts, the public authorities must therefore play an active role in the implementation of the public city, promoting involvement of public and private stakeholders in preparation and for the implementation of the program of urban redevelopment, through selection procedures of public evidence. The activation of these procedures allows for greater transparency in the rules of distribution of capital gains and establishes common criteria in the contribution to the creation and the execution of collective works (Camagni, 1992). Given the change concerning the use and rewarding construction, granted to private developers, the public entity is called to determine the extent of the burden on beneficiaries. These charges have an extraordinary character, because they are additional to those routinely provided by planning laws: a criterion of fairness is that the extraordinary expenses are proportionate to economic benefits, enjoyed by private individuals, in terms of capital gains, resulting from use of additional construction rights (Stanghellini, 1996).

The highlighted path leads to recognition a very important role in evaluation, able to pursue the following objectives:

- to define public goals and maximize their level of achievement
- to make transparent consultation and final decision
- to govern formation and distribution of urban income.

The evaluating procedure and the “new rules” in evaluating of private proposals have to be known to all participants in the program, and to meet the criteria for homogeneity, transparency and fairness. Under a general profile, having established the compatibility of the proposed program by the private party and the objectives of the municipal urban planning, it is necessary to represent, evaluate and compare the two levels of convenience - expressed in monetary terms - retractable from the public entity and the private proposer. The economic evaluation and the monetary quantification of goods and services purchased by the public authorities must be substantiated by technical elements and data as objective as possible. The contents of this evaluation procedure have to be examined in a technical context, and the results subsequently checked in a political context.

This paper aims to investigate the role that can be exercised by evaluation in negotiation procedures and then to provide a methodological contribution which

can be used in order to start activities for the assessment of public-private partnerships in an appropriate manner.

The practicality of this valuation model is tested in two case studies, relative to the definition of the 'Contratto di Quartiere II' (CdQII) and the Program for urban regeneration (Riurb) of Ravagnese (Calabrò & Della Spina, 2009). Given the obvious implications in the field of Real Estate and economic evaluation, for both programs and in particular for CdQII, the public authorities required the technical and scientific support of the Appraisal and Economic Evaluations Laboratory -LaborEst of Department of Urban and Architectural Heritage (PAU), in these steps:

- preparation of the program
- evaluation of sustainability assessment of private proposals to be admitted to the program
- developing of directing instrumentations for promotion of architectural quality
- appraisal of extrastandards, charged to private entities adhering to the programs (Calabrò & Della Spina, 2008).

The experimentation begun allowed, on the one hand, the refinement of the technical contents of this methodology with reference to the specific field of urban regeneration, and on the other hand, has proposed that the model suggested has a general validity, because it could be used for evaluation of any urban transformation plan proposed by private subjects.

The explanation of the procedure to appraise the total capital gains generated by the program of rehabilitation and for an appraisal of extrastandards, charged to private entities, is preceded by a description of the evaluation problem, which has stimulated its development.

3. The evaluation problem

The proposals, made by private entities who have contributed to defining the 'CdQII' and 'Riurb' programs, relating to private property, provide for the construction of volumes greater than those permitted by the municipal construction plan in force.

The City authorities, having verified the consistency of their actions with the planning objectives, intend to enable these increases in exchange for an economic repayment, reflecting the extent of benefits obtainable by private investors, which, overall, correspond to the total capital gains that may be generated by the redevelopment program.

In general, the changes made under derogation of urban planning instruments determine an added value, or private benefit (B_p), that may be obtained by various figures, also possibly coinciding with the same subject. A significant share of these capital gains, however, should also be of benefit to the community, in the form of extraordinary expenses (or 'extrastandards').

Among the public and private bodies receiving shares of the capital gains are:

- the city authorities, developers of the PUC, beneficiary of extraordinary financial contributions, that finalizes its action towards achieving better urban quality, also through the creation of works and community facilities;

- the entrepreneur developer of operations, unique contact of the public subject, beneficiary of capital gains of developer and on which bear the extraordinary financial burdens: its objectives are related to the maximization of profit in relation to the increase of the cost of production or the market value (Forte de 'Rossi, 1992, pp.157 ff.);
- the building contractor, to whom are due capital gains on the cost of construction; if not the same person as the developer he does not catch more shares of capital gains;
- the landowner, whose goal is to maximize the value of the property in variation of income determined by the modification of existing planning instruments and who then receives a share of the capital gains in form of rent;
- the funder, who finalizes his investment to maximize the income in comparison with other kinds of investments.

The surplus (P_{VL}) is equal to the difference between the market value (V_M) of building products and the price of all the factors used in the production cycle (C_P), if one considers the original value of the land, or (C_P') with the actual exchange value of the land¹.

$$P_{VL} = V_M - C_P \quad (1)$$

$$P_{VL}' = V_M - C_P' \quad (2)$$

Some authors believe that the capital gains will be transformed entirely into estate rent, because it is incorporated in the increase of the value of the land, as a result of urban change: it is possible in this case to calculate the capital gains as transformation value (Micelli, 2004).

Conceptually, the surplus actually incorporates not only the rent but also the ordinary profits and the extra profits of the developer (Morano, 2007; Simonotti, 1997).

3.1 The Total Benefit (Bt) and the profit for developer (U_p)

In the economic analysis of urban transformations, with an increase in the developer's profit there is a reduction in the profit to be gained from the prop-

¹ Several authors (Realfonzo, 1994; Prizzon, 2001) make a distinction between ordinary profits and extra profits, including the first in the production cost. In light of this specific cognitive context and for the purposes of this study, it was considered more appropriate to consider in the model the cost of production net to ordinary profit of developer (U_p). In the expression (3) the cost of the C_A is considered before change of urban use. Its value is therefore appropriate to its original use. In practice, however, the real cost of production C_P' - in expression 2 - is higher than C_P because it includes the actual price of purchasing the area C_A' : although not being equal to that of building areas, it is higher than the original value, incorporating in the form of rent a part of capital gains, generated by expectation of a share of urban change.

erty (Prizzon, 1995). However, the appraisal of the developer's profit, in empirical terms, is not simple because it is difficult to obtain sufficiently reliable information.

In this specific case of interventions in variation of planning instruments it is reasonable to assume the total benefit (B_t), from which to deduct the public benefit, equals to the profit made by the developer (U_P) which, in this circumstance, will probably carry a share of extra profits lower than similar interventions but nevertheless comply. In order to maintain the economic feasibility of the intervention it is also crucial to check that once the public benefit is deducted, there is a satisfactory residual private benefit.

Real estate literature (Forte & de 'Rossi, 1992, § 7.7, p. 157; Realfonzo, 1994, § 4.4.2, p. 142; Prizzon, 1995 chap. 1, p. 12 ff.) dwells on the calculation of the profit of the developer (U_P); it is usually portrayed at the end of the process, represents the remuneration of corporate capacity and the risk taken by the developer of investment. Generally, the developer's profit is calculated as a rate of the cost of production and investment (30% -40%) or a percentage of the market value of built property (usually between 20-25%) (Calabrò & Della Spina, 2010).

Realfonzo, finally, returning to the work of Forte e de' Rossi, believes that the developer's profit oscillates between 10 and 30% of market value, increasing with the rise of V_M and profits will depend on general economic conditions and on qualitative characteristics of the product (Realfonzo, 1994, pag. 142).

4. The purpose of appraisal

This work should be seen in the context of the question discussed above. The purpose of appraisal is twofold: to reach a preliminary to the construction of an experimental model for a determination of capital gains and then to determine an equitable distribution among different actors involved in a process of urban transformation. This is to seek the maximum achievable result for the community and, at the same time, ensure adequate levels of profitability for the proposed investment by private entities.

The time period, considered for an economic calculation, is the present one in which the dynamics of real estate identified are an expression of the period of recession in which the program was developed and it reflects the crisis that characterizes the current economic and productive system.

5. Basic assumptions for the construction of the experimental model

The construction of this model requires a preliminary definition (Morano, 1998) of:

- theoretical assumptions;
- the means by which it carries out the relationship between public and private sectors;
- the kind of convenience to which it refers and tools used for their measurement and their comparison;

- the criteria used for defining the balance of interests between the public and private entities.

The appraisal model used, as announced at §. 3.1, is derived from the approach of Forte de' Rossi and resumed later by Realfonso (Forte & de' Rossi, 1992. Realfonso, 1994).

The total benefit, generated by the intervention, from which to deduct the portion of extrastandards, is assumed to be equal to the profit of the developer U_p : the calculated profit is reached by applying to the cost of production C_p' a percentage derived using a multicriteria model that clarifies and quantifies the variables identified by those authors.

6. Procedure used to appraise the capital gains

The procedure is divided into four phases:

- Step 1 - Acquisition of preliminary information.
- Step 2 - Appraisal of the developer's profit.
- Step 3 - Calculation of extrastandards.
- Step 4 - Verification of economic feasibility.

6.1 Acquisition of preliminary information

In step 1 preliminary information is acquired about urban condition of areas object of transformation. Through a specific format, the original planning destination is analysed, its construction indices and achievable building volumes, divided into three uses: residential, commercial and office, leaving open the possibility to include additional uses (artisanal, industrial, etc.).

Then the planning capacity is examined, still divided into those three uses, the increase in volume (IV), resulting from the difference between the planned volume and that permitted by the Plan, is the urban premiums to which to refer the calculation of extraordinary expenses or extrastandards.

Other information, that is necessary to acquire first is represented by the unit costs of implementing C_p' that the developer of the intervention has to bear to "transform" the area that is object of intervention.

6.2 Appraisal of the developer's profit (U_p)

The developer's profit (U_p) is usually defined at the end of the process and it can be calculated as the rate of the cost of production. In reality, the proposed procedure allows an appraisal of the market value V_M once known the cost of production C_p' , as the sum of these costs and the profit for developer:

$$V_M = C_P' + U_P \quad (3)$$

In relation to current economic conditions and given the level of taxation of business income, it can be assumed that the gross profit (that is, the normal developer's profit) can assume a value of between 10% to 30% of the value of the finished product (V_M) (Forte & de 'Rossi, 1992), which, through a simple spin-off operation, allows for the retrieval of a percentage of profit between 11% and 43% of the cost of production (C_P').

$$U_P = C_P' * 11 \div 43\% \quad (4)$$

i.e. the developer's profit can vary between a minimum and a maximum:

$$U_{P_{\min}} = C_P' * 11\% \quad U_{P_{\max}} = C_P' * 43\% \quad (5)$$

In order to determine the percentage of gross profit precisely to apply to the appraisal of the developer's profit, because it is not easy to retrieve the primary data directly, it follows that it is necessary to determine it indirectly, by analyzing the circumstances which directly influence it quantitatively.

As an experiment and as first hypothesis, which needs further verification, it is possible to assume that the thirty-two points of variation between the minimum profit ($U_{P_{\min}} = 11\%$) and maximum profit ($U_{P_{\max}} = 43\%$) are determined by a number of "ascendant or descendant influences" (F) (Realfonzo, 1994) acting, in increments, on minimum profit ($U_{P_{\min}} = 11\%$).

$$U_P = U_{P_{\min}} + C_P' * F \quad (6)$$

Given the preliminary level of planning definition, the specific influences on the U_P taken into account, only of an exogenous kind, are the following:

1. Performance of the real estate market;
2. Geographic area;
3. Size of the urban agglomeration;
4. The location within the urban agglomeration.

As shown in Table 1, through comparative experiences of the market, it is possible to evaluate summarily the percentages of influences, or, "variable factors (F)".

6.3 Calculation of extrastandards (E_S)

It is possible to hypothesize different levels of taxation in the form of extrastandards (E_S), for which were carried out the simulations for these case studies. It should be noted that the evaluation of fairness of tax levy, in the form of extrastandards, and the level of remuneration of the developer has an eminently political role.

Table 1. Multicriteria model for the appraised profit (U_p) of the real estate developer.

Variable factors (F)		Score (%)
Situation of the real estate market	Growth	8
	Stagnation	4
	Decrease	0
Geographic area	North	8
	Center	4
	South	0
Size of cities	> 500.000 Inhabitants	8
	250.000 - 500.000	6
	50.000 - 250.000	4
	10.000 - 50.000	2
	< 10.000 Inhabitants	0
Urban location	Prestige	8
	Central	5,33
	Semicentral	2,67
	Device	0

The total costs of the private entities may be either the sum of monetary compensation to areas for standards to allocate and the extrastandards or be limited only to the extrastandards, if the projects in question are included in expanding or completing areas.

6.4 The verification of economic feasibility

The sum of the production of cost C_p' and total costs in the form of extrastandards which the private developers will have to bear for planned investments, permits an appraisal of the total cost of production (C_{pt})

$$C_{pt} = C_p' + E_s \quad (7)$$

This total amount, deducted from the estimated profit, that the developer of the project may obtain in the form of real estate market value makes it possible to arrive at an appraisal of net profit U_{pn} , which represents the developer's actual fee, before tax.

$$U_{pn} = V_M - C_{pt} \quad (8)$$

which should be checked for consistency, or if, taking account of the risk to the developer, is such as to make the transformation of little interest.

Given the aims of its use, the synthetic procedure used does not cover variations in time, and therefore the timing of the distribution of costs and incomes is simultaneous, as are the monetary outlays, including the financial costs, sale times of products, and the capacity of the real estate market to absorb this entire construction plan is also instantly reduced. This is reflected clearly in the results of evaluation (Morano P, 1998).

7. Expected results and concluding considerations

This article aims to illustrate an experimental model for appraising the value of the residential real estate market, to be used in the programming phase, as part of public-private partnerships, taking into account the influence of exogenous qualitative variables. The procedure is completed with the calculation of capital gains as the difference between market value and a conventional value cost.

The methodology described is still experimental and may therefore be of further developed and refined, in the light of future research, of the results achieved through the Program of urban regeneration and a desirable academic comparison.

The experimentation begun is accompanied by various expectations: firstly, the described evaluation procedure - "new rules" - confers to the action of public authorities requirements of transparency and fairness concerning the community, thus obviating an acute shortage of current experiences of urban consultation, and it will continue with the aim of strengthening the reliability of the multicriteria model to calculate the developer's profit, especially with regard to the completeness of the set of factors and the set of criteria chosen for the appraisal. In particular, the dimensional categories, in which cities are divided and possible methods for calculating the influence of "attractiveness of the city" factor, referring, for example, to tourist locations will be verified; an analogous study will be necessary regarding the "quality construction" factor and the weight distribution between reciprocal factors, at the same level.

Another aspect, that seems important at the moment, is a focus on a possible usefulness of differentiating the appraisal of capital gains, according to a case study that considers different combinations of coinciding figures with the same entity (developer and building contractor; developer and landowner) and usage of equity or debt capital.

Finally, other variables to consider will be the influence of various factors, such as time, in relation to the expected cash flows, and the investment risk factor, especially related to the influence of concentrated supply in time and space on the price system.

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