

The Beautiful City and the Rent from Information. Monetary Axiology of the Shape Surplus

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Abstract

This contribution is part of a larger study concerning the Cost Benefit Analysis of the Madrid-Rio Park, one of the main public works in the field of urban redevelopment in Europe over the last twenty years.

The scale of the intervention and its effects on the urban arrangement of the Manzanares River area encourage reflections on some issues of the wealth redistribution in the face of such a huge investment amount; in this experimentation we try to stress some fundamental categories of them.

The paper focuses on the monetary quantification of secondary benefits coming from the commercial, accommodation, sports and catering businesses located in the large areas made free after the burial of the stretch of the motorway once flanking the river.

According to the logic of the business plan, a Discounted Cash Flow Analysis was carried out by transforming all items of the income statement into annual revenue and expenditure streams; therefore, the

components of the secondary benefit generated, and their composition were analysed in terms of relevance with respect to the possible earners.

At the same time, these results were compared with the data on concession fees charged by the Madrid administration and some hypotheses were made regarding the fees applicable to current and future business, by applying the residual value, as a result of risk and scenario analyses, carried out on the strategic variables of the investments.

Finally, the overall result – related to all businesses comprised in the areathe area, with regard to the differentiated concession fees applicable for each class of business – was compared with the current management costs of the park, providing one of the possible measurements of the efficiency of the current concessionary policy and indicating any other further potential.

1. INTRODUCTION. RENT AND THE CITY

The issue of the redistributive effects deriving from the realization of the great urban public works concerns the great questions of economic justice and, in the perspective of the estimate, aspects connected to the creation of models of allocation of territorial-urban wealth.

In such prospect, this contribution deals with some economic-evaluation aspects necessary for the management of public properties characterized by significant potential for productive use, and by the possibility of generating mutual benefits.

Many social responsibilities involve public decision-

makers when collective assets acquire economic-real estate potential due to specific physical and functional transformations that are sometimes hardly reversible. Similarly the scientific responsibility of the economic-estimative best-practice emerges, defining the conditions for these goods to continue to perform the functions of the “social capital of the city” (Rizzo, 2003). The evaluation, therefore, takes on a planning function that is based on the evaluator’s judgment, on his vision and on the mission that he intends to pursue by means of evaluations process.

The convergence between the evaluator’s and the decision maker’s perspectives “justifies” the project initiation; the subsequent management process of the work develops in a time span within which the interactions between economic and urban functions can produce surpluses of wealth and values exceeding the ordinary ones. In the present case – given the huge economic-financial effort that was difficult to justify in the era of austerity – such surplus has enabled the Madrid administration to win the most important civic challenges, the one of the urban shape.

Such an act against the tide, but still in reason, is one of the most controversial aspects of the project for the perspective of science of evaluation, that deals with the major public works being aware that they are, typically, “events”, whose effects do not fall under “systems of probability”, given that they aim at establishing new and different “fields of possibilities”.

The economic estimates proposed in this study concern the monetary measurement of the secondary benefits, a smaller area of the wide range of the motivations supporting the implementation of this public work, whose critical commitment is not less dense. Moreover, such commitment is oriented towards the land-urban distributive justice objective (Lombardi and Cooper, 2016), due to the relevance – in urban development – of rent, that is the most critical, as well as strategic, of the economic categories.

Although rent is typically considered “a yield not earned” (Camagni, 2008, p. 10), many arguments address that it is somehow necessary.

As first, since rent is the mainstream dream of everyone, it is not so popular stigmatizing it.

As second, rent is a multiple-shape and chameleonic category mostly depending on social communication rather than economic rationality, because it involves the asymmetry of the human capacities. Francesco Rizzo (1972; 2011) proposed the following articulation:

- 1) Rent due to scarcity or rareness;
- 2) Differential rent:
 - a) Due to different location;
 - b) Due to different fertility;
 - c) Due to social distance or difference;
 - d) Due to economic distance or difference;

- 3) Rent due to mobility (*transfer earning*);
- 4) Rent due to individual capability;
- 5) Rent as extra-profit due to the private ownership of the production factors.

In further studies, Rizzo added the sub-cathery of “rent due to information”, that is “rent due to shape”, thus introducing the “information-value theory” and, as a consequence the “art-value theory” based on the economic-estimation semiotics and on communication theory founded in the ground of sociology (Rizzo, 1999, sections 14 and 15; 2013).

Since rent is ubiquitous and protagonist – albeit in its several peculiar appearances – in every urban settlement, the criticism addressed to it should concern the way in which it appears, rather than its essence.

Rent should rather be accepted as «*surplus* and as such, the premise of the *miracle of shape*» (Recalcati, 2007), as a kind of energy that can be aimed at restoring the structure of the city in the areas where it has been missed. Nowadays, social inclusion is the most significant demand for shape, and since distributive justice is the original prospect of economic estimation, that is the “science of the value judgement”, relevant theoretical issues and robust methodological tools need to be involved and to converge toward this objective.

The third consideration is the consequence of this articulation, multiformity and omnipresence of rent, and concerns the role of rent in the “social stratification”. The latter is generally assumed as the mirror of the natural heterogeneity of individuals in terms of merit, ability, aptitude in the context of the ordering of communities.

Now, if on the one hand in the liberal societies and in the (neo) liberal socio-economic systems this stratification overcomes the threshold of merit giving rise to social inequalities and polarization, on the other hand their opponents propose only a reformist perspective, if only for the fear that the egalitarian model has instilled until now in its past and present forms.

The misunderstood individualism due to this compliance – according to which any limit to the individual’s ability to get rich is excluded – leads to the progressive decline of the wealth tax and progressivity in the national tax systems.

The fourth consideration concerns the somewhat “genetic” fate of the “human community, which differs from the other kingdoms of nature by its intrinsic “intention of legacy”, that is the tendency to create artefacts, institutions, works of intellect, narrations, with the aim of exceeding the time limits and and the very space of the physical existence of individuals.

The history of the economy has narrated the way in which this temporal surplus has been managed, the history of architecture and city has shown its forms.

Together they say how the forms of the surplus of social product, commanded by the surplus of desire with

respect to need, have been transmitted or dispersed.

This tension to exceed and its constancy crowns the rent (not the profit or the salary – even if the boundaries between these categories can sometimes, according to the accountants, not appear distinct, Monge, 2014; Saita, 2001) queen of the economic categories; but while in the past, fertility and distance have been the main and most manifest rent bearers, who have created the harmonies and disharmonies of the relationship between city and countryside, which the multiplication of the ways in which information is transformed into wealth, on the one hand confuses rent bearers, on the other facilitates access to the rentier class.

Among the “forms of information”, urban quality, in its broadest sense, is the one closest to the interests of the economic-estimative discipline.

The particular case dealt with here tries to highlight the way in which the transformation of this economic energy into “urban form” has been represented through the patient use of “monetary language”, a compressed expressive medium that selects only some of the evidences of the value judgment addressed to the merit of an intervention, a work, a new form.

In the context of a broader study of Cost-Benefit Analysis carried out *ex post* on the Madrid Río Park, this contribution proposes a deepening on the production of wealth and the capture by the municipal administration of that residue, the urban income, which the impressive public investment has generated in the fertile soil of the entrepreneurial initiative of a great European capital, and of the axiological profile of its population, whose relationship to beauty, well-being and security have been represented to the extent of a more than adequate willingness to pay (Giannelli et al., 2018).

The problem faced here concerns, in particular, the evaluation of the secondary benefits, direct and indirect, deriving from the economic activities to be located in the public areas granted in concession for commercial, catering, sports and accommodation functions.

2. MATERIALS

The Madrid Río Park (fig. 1), built in the Spanish capital between 2004 and 2011, is the result of an impressive program of interventions aimed at burying a 6 km long stretch of the M-30 motorway that runs alongside the Manzanares river within an urban area, on the other to



Figure 1 - Views of the Parco Madrid Río areas before (2005, left) and after (2018, right) the transformation.

build an urban park in the space freed on the surface (Burgos et al., 2014).

This is a design challenge carried out on the economic value of a self-consistent territorial unit that recreates, in spatial terms, two previously separated areas of the city, and in socio-cultural terms, environmental values and landscape values.

The area where the park is located today was crossed by the M-30 motorway until 2004, within which the Manzanares River remained invisible and inaccessible. Furthermore, the barrier effect of the infrastructure, and a high accident rate have led the Municipality of Madrid to bury this stretch of motorway and build the Madrid Río park.

The realization of this work returned the Manzanares river to citizenship, making a large public space with green areas, cycle paths and numerous services available again.

The implementation experience proposed here is part of the extended land-urban policy framework supported by socio-economic calculation in the form of Cost-Benefit Analysis, and focuses on the redistributive potential of the public work by calculating the secondary direct and indirect benefits coming from the management of the Park areas that can be intended for secondary activities.

Figure 2 summarizes, within the spatial context of the park, the general economic profile of the project indicating: with pie charts the overall size of the values calculated in the CBA: the internal pie represents the costs due to the interventions of realization and management of works linked to the M-30 motorway (in dark gray) and those connected to the Madrid Río Park (in light grey); the

external pie represents the benefits generated by the improvement of transport infrastructures (in gray) calculated in terms of avoided costs; the direct benefits deriving from the creation of the Park consisting of use and non-use values estimated by applying the contingent valuation technique (in light grey) and the externalities generated by the commercial activities, which constitute the focus of this paper; the map displays the location of the catering, accommodation, sporting and commercial businesses that took place in the Park on expensive concession of the areas to the companies that later built structures and plants on them.

The cost of the works has been estimated considering both the works to bury the M-30 motorway and the works carried out on the surface. In addition, the costs of managing and maintaining the works were considered. The information sources used to estimate the costs were the Boletín Oficial del Estado (BOE) and the Boletín Oficial de la Comunidad de Madrid (BOCM), in addition to the annual publications of the Municipality of Madrid which list the activities carried out by Área de Gobierno de Urbanismo y Vivienda (Madrid Municipality, 2017).

The direct benefits deriving from the burial of the M-30 motorway were evaluated by the Municipality of Madrid in a 2012 study. The direct benefits deriving from the Madrid Río Park are given by use and non-use values, estimated by applying the Contingent Valuation Method, and environmental benefits, estimated by considering CO₂ absorption and soil permeability (Giannelli et al., 2018).

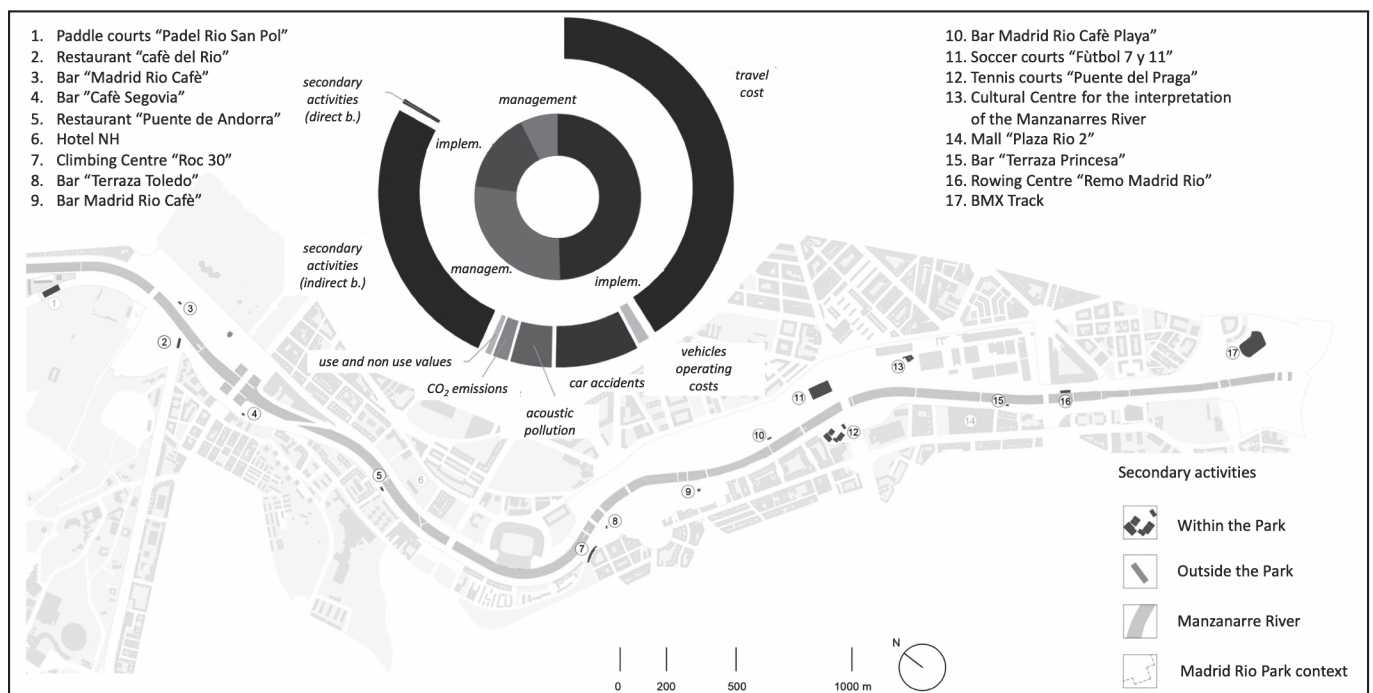


Figure 2 - Location of the secondary activities in the area of the Park.

3. METHOD

3.1 The discounted cash flow analysis: business plan and sensitiveness analysis

The Discount Cash Flow Analysis (DCFA) is one of the most rigorous tests within the most general assessment approach of the CBA. It takes into account only the tangible, primary and secondary benefits of an investment project and provides specific information on economic efficiency and financial sustainability to the entrepreneurial subject (Mariani, 2012) which generally assesses its convenience.

Here the ACR was used to represent the possible distributional effects generated by a large public work, on the scale of the secondary activities, which constitute a resource of strategic interest for the efficiency of the management of the work, due to their dual capacity to generate direct benefit flows (Naselli, 2014) in the form of concession fees, and indirect benefit flows to the extent of the residual part of the added value generated by these activities (Rajan et al., 2012).

For this purpose, the DCFA here performed includes also the secondary indirect benefits, by accounting the costs incurred by the companies, that form part of the added value for local community (McPherson 1992; Giuffrida et al., 2018).

The issue of secondary activities raises several interesting points as:

- 1) they generate only benefits, albeit net of the opportunity cost of the land granted; a significant aspect from this perspective concerns the reversibility of the transformations whose restoration costs would limit the flexibility of these areas, a primary requisite for the above mentioned "intention of legacy" among the tasks of the public subject;
- 2) their economic life coincides with the management period of the public work as a whole: in this time span the administration drives the transformations for the best trade-off between effectiveness and efficiency;
- 3) they involve the negotiation between administration and concessionaires as regards the choices concerning the implementation of new resources and the capture of the consequent surpluses for the benefit of the public;
- 4) the evaluation of the direct secondary benefits involves the logic of residual value, explaining the distributional variables and emphasizing the related intra-generational solidarity issues according to an urban policy framework more generally intended to the questions of intergenerational solidarity.

In this perspective, a business plan was drawn up for each of the 17 activities (Facchinetti, 2001; Borello, 2009;

Ferrandina, 2017; Blackwell, 2018) combining quantities calculated in analytical and synthetic terms depending on the complexity of the activity and the information available (Campedelli, 2004; Brusa, 2011), and grouped into:

- revenues;
- depreciation and amortization;
- management costs;
- maintenance costs;
- staff costs;
- interest;
- taxes;
- normal profit.

Therefore, the valuation was made on the basis of the foreseeable annual cost and revenue items. The cost items of tangible and intangible fixed assets, in general durable goods and services whose useful life overcomes one year – buildings, plants, equipment, furnishings, consulting, events – have been turned in annual costs through the application of appropriate amortization coefficients, once their useful life has been defined (Dallocchio, 1996; D’Onofrio, 2016; Damodaran, 1996).

Revenues offset all costs, including the components of Added Value (VA): personnel costs, interest, taxes, normal profit and extra-profit. The latter is considered the surplus over the normal profit due to the city effect – in this case amplified by the realization of the park – that is the part of the wealth created that can be extracted by the municipal administration for the benefit of the public. This extra-extraordinary advantage must be internalized to partially compensate the economic-financial commitment assumed for the realization of the work. Extra-profit is calculated by applying the residual value formula:

$$f^* = \frac{R - \left[W + T + G + M + \left(I \frac{r_a q^{\bar{n}}}{q^{\bar{n}} - 1} \right) \right] (1 + r_n)}{(1 + r_n)}$$

where:

- f^* = extra-profit;
- R = revenues;
- W = personnel;
- T = taxes;
- G = management costs;
- M = maintenance costs;
- I = fixed assets;
- r_a = interest rate for amortization;
- q = deferral coefficient;
- \bar{n} = fixed asset service life;
- r_n = normal profit rate.

3.2 Risk Analysis

The attitude to risk plays an important role in the investment choices (Vose, 2008) by selecting investors based on this propensity, that is, on the different capacity to associate each event with a certain probability that it occurs in the future: the result is a wide range of yield/risk profiles (Platon and Costantinescu, 2014). In most cases, investors behave within the range of the two conditions that define this range. Investor behaviour has been extensively investigated in the literature; a correlation was found between earnings expectations and perceived risk; in particular a tendency to maximize profit for a given level of risk, minimizing the risks associated with fixed profits (Zio, 2013) has been revealed; as the level of risk increases, the investor is willing to accept an additional risk only if this is accompanied by a more than proportional expected return; at a certain point a risk limit will be reached beyond which the investor will not go, whatever the extent of the possible but uncertain compensation (Mun, 2015).

The correlation between earnings expectations and perceived risk is a function of the individual investor's attitude to risk. The concept of risk is therefore always associated with the behaviour of the investor (Van Dorp and Duffey, 1999). In any case, the generic investor, regardless of his propensity or aptitude for risk, will tend to limit the uncertainty relating to the investment to be undertaken to a minimum, transforming uncertainty into risk whenever possible. In fact, in conditions of uncertainty the economic operator is not able to associate a probability to the occurrence of future events; at risk he can measure it as the probability that the future event will occur.

The risk associated with the investment is measured based on the dispersion of the expected results. In a general sense it is possible to affirm that an investment is all the riskier as the possible results that follow from it are dispersed around the expected value. The dispersion of the expected values of a project is also called "volatility" (Aggarwal, 1993).

The traditional methodologies for risk analysis, instead of objectively quantifying the perception of risk, focus on the determination of the risk premium to be added to the required return in the "normal risk" conditions.

In the methodologies based on the analysis of the probability, to a static formulation of the evaluation criterion and of the characterizing parameters, for which it is impossible to construct a probability distribution in relation to the expected values, a spectrum of forecasts is substituted on the basis of specific conditions. In this case, the forecast spectrum will reflect a set of assumptions about the economic and social conditions that may occur

during the investment period.

In the case of probabilistic approaches, it can be difficult to directly estimate all the possible combinations of values that the different parameters can assume, according to the respective probability distributions (Hoesli and Morri, 2010).

This problem is effectively addressed by applying the Montecarlo Method, which consists in the statistical simulation of a sufficiently high number N of possible combinations of the values of the key parameters, consequent to the attribution of certain probability distributions, and in the calculation of the output on the basis of the equations of the model.

Thus, each of the combinations generated randomly, but with respect to the probability distribution assigned to each variable, will give rise to a particular value of the evaluation criterion.

By associating the relative frequency to each value of the criterion, that is the number of times that the same value is repeated in the simulation, it is possible to construct a probability distribution of its assumed values that will allow to determine the one expected by the investment.

The fundamental steps of the application of the Montecarlo Method can be summarized as follows (U.S. Environmental Protection Agency, 1997).

- 1) *Identification of the exogenous variables and the critical parameters* on which the economic value of the investment depends. Sometimes a pre-examination is suggested which allows to select, as in the sensitivity analysis techniques, the variables with the greatest potential impact on the results for the purposes of evaluation. We must identify and determine the functions that best describe the trends over time of these variables and highlight the correlations between the variables that may be significant for the purposes of the analysis.
- 2) *Definition of the model* as an explanation of the mathematical relationships that allow to determine the objective output variable according to the input variables and parameters.
- 3) *Attribution of the probability distributions of each input variable*, either on the basis of quantitative data, or by a decision maker or, again, by consulting experts with appropriate methods.
- 4) *Setting up the simulations* by defining the plan of experiments and the number of iterations to execute and launch.
- 5) *Verification of results* based on the production of some final reports aimed at identifying any problems encountered in the procedure, and some other final reports that express (numerically and/or graphically) the statistical analyses of the output variables on which the investment choices will be based.

4. APPLICATIONS AND RESULTS

4.1 Secondary direct and indirect benefits

The externalities (Micelli, 2004; Oppio et al., 2018) generated by the secondary activities located in the Park based on Public-Private Partnership contracts, (European Commission, 2003; Copiello, 2011; Crivelli, 2011; Calabrò and Della Spina, 2012) partly constitute a direct secondary benefit, partly an indirect benefit.

The direct secondary benefits are the flow of revenues that the Municipality perceives as concession fees which in turn are returned to the community as public services (Stanghellini and Mambelli, 2003).

The indirect benefits consist in the economic well-

being created by the aforementioned activities and can be measured by the added value related to the compensation of labour and capital: human, financial and public.

Table 1 summarizes the business plan of one of the catering activities.

Once calculated the extra-profit, which is the fee to be repaid for concessions, the 17 analysed activities were compared, and the various items were grouped based on the distinction between direct and indirect benefits as reported in Table 2 which also constitutes the framework methodology of inputs (all cost items) and outputs (revenues) that characterize the secondary activities.

Table 1 - Example summary of the Business Plan for one of the catering activities

Description works and activities	Business Costs and Revenues									
	business revenues	personnel	management	amortizations	maintenance	extra-profit	interests	gross profit	taxes	
building construction	€ -	€ -	€ -	€ 31,063	€ 13,346	€ -52,763	€ 17,717	€ 8,354	€ 2,506	
additional expenses	€ -	€ -	€ -	€ 3,106	€ 1,335	€ -5,276	€ 1,772	€ 835	€ 251	
safety intallment control unit	€ -	€ -	€ -	€ 123	€ 20	€ -170	€ 23	€ 27	€ 8	
safety intallment motion detector	€ -	€ -	€ -	€ 493	€ 80	€ -681	€ 93	€ 108	€ 32	
smoke extraction system	€ -	€ -	€ -	€ 308	€ 50	€ -426	€ 58	€ 67	€ 20	
complete bench	€ -	€ -	€ -	€ 2,207	€ 600	€ -3,336	€ 707	€ 528	€ 158	
cash desk	€ -	€ -	€ -	€ 85	€ 16	€ -120	€ 19	€ 19	€ 6	
tables	€ -	€ -	€ -	€ 1,110	€ 180	€ -1,532	€ 210	€ 243	€ 73	
chairs	€ -	€ -	€ -	€ 1,479	€ 240	€ -2,043	€ 279	€ 323	€ 97	
carts	€ -	€ -	€ -	€ 37	€ 6	€ -51	€ 7	€ 8	€ 2	
showcases	€ -	€ -	€ -	€ 247	€ 40	€ -340	€ 47	€ 54	€ 16	
cooking block	€ -	€ -	€ -	€ 270	€ 60	€ -392	€ 70	€ 62	€ 19	
fridge	€ -	€ -	€ -	€ 616	€ 100	€ -851	€ 116	€ 135	€ 40	
coffee machine	€ -	€ -	€ -	€ 370	€ 60	€ -511	€ 70	€ 81	€ 24	
dishwasher	€ -	€ -	€ -	€ 296	€ 48	€ -409	€ 56	€ 65	€ 19	
utensils, kitchenware and canteen	€ -	€ -	€ -	€ 3,332	€ 400	€ -4,434	€ 475	€ 702	€ 211	
services	€ -	€ -	€ -	€ 286	€ 30	€ -376	€ 36	€ 59	€ 18	
warehouse	€ -	€ -	€ -	€ 370	€ 60	€ -511	€ 70	€ 81	€ 24	
business consultant	€ -	€ -	€ -	€ 3,000	€ -	€ -3,564	€ -	€ 564	€ 169	
other expenses for bureaucratic obligati	€ -	€ -	€ -	€ 225	€ -	€ -267	€ 25	€ 42	€ 13	
telephone connection	€ -	€ -	€ -	€ 15	€ -	€ -17	€ 5	€ 3	€ 1	
water mains connection	€ -	€ -	€ -	€ 22	€ -	€ -26	€ 7	€ 4	€ 1	
gas network connection	€ -	€ -	€ -	€ 22	€ -	€ -26	€ 7	€ 4	€ 1	
power supply connection	€ -	€ -	€ -	€ 22	€ -	€ -26	€ 7	€ 4	€ 1	
concessionary liability insurance	€ -	€ -	€ -	€ 148	€ -	€ -176	€ 28	€ 28	€ 8	
insurance damage to completed works i	€ -	€ -	€ -	€ 148	€ -	€ -176	€ 28	€ 28	€ 8	
inauguration party	€ -	€ -	€ -	€ 899	€ -	€ -1,068	€ 99	€ 169	€ 51	
responsible	€ -	€ 58,000	€ -	€ -	€ -	€ -68,911	€ -	€ 10,911	€ 3,273	
chef	€ -	€ 50,000	€ -	€ -	€ -	€ -59,406	€ -	€ 9,406	€ 2,822	
DJ ven-dom	€ -	€ 15,000	€ -	€ -	€ -	€ -17,822	€ -	€ 2,822	€ 847	
waiter Fri-Sun	€ -	€ 60,000	€ -	€ -	€ -	€ -71,287	€ -	€ 11,287	€ 3,386	
kitchen operator	€ -	€ 252,000	€ -	€ -	€ -	€ -299,406	€ -	€ 47,406	€ 14,222	
counter sales	€ -	€ 144,000	€ -	€ -	€ -	€ -171,089	€ -	€ 27,089	€ 8,127	
catering operator	€ -	€ 396,000	€ -	€ -	€ -	€ -470,495	€ -	€ 74,495	€ 22,349	
cleaning operator	€ -	€ 72,000	€ -	€ -	€ -	€ -85,545	€ -	€ 13,545	€ 4,063	
tapas revenues	€ 576,000	€ -	€ -	€ -	€ -	€ -570,297	€ -	€ 5,703	€ 1,711	
revenue lunch / dinner	€ 1,612,800	€ -	€ -	€ -	€ -	€ -1,596,832	€ -	€ 15,968	€ 4,790	
appetizer revenue	€ 403,200	€ -	€ -	€ -	€ -	€ -399,208	€ -	€ 3,992	€ 1,198	
event revenues	€ 120,000	€ -	€ -	€ -	€ -	€ -118,812	€ -	€ 1,188	€ 356	
license fee	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	
safety	€ -	€ -	€ 1,000	€ -	€ -	€ -1,188	€ -	€ 188	€ 56	
business start up promotion	€ -	€ -	€ -	€ 493	€ -	€ -586	€ 93	€ 93	€ 28	
water, electricity and gas consumption	€ -	€ -	€ 28,809	€ -	€ -	€ -34,229	€ -	€ 5,420	€ 1,626	
raw materials bars	€ -	€ -	€ 894,960	€ -	€ -	€ -1,063,319	€ -	€ 168,359	€ 50,508	
consumables bar	€ -	€ -	€ 81,360	€ -	€ -	€ -96,665	€ -	€ 15,305	€ 4,592	

Table 2 - Economic and financial elements of the calculation of direct and indirect secondary benefits

Activities	Revenues	Wealth created							Wealth destroyed		
		Indirect benefits				Private costs			Direct benefits		
		Profit	Personnel	Taxes	Interests	Management	Amortizations	Maintenance	Extra-profit		
Restaurant 1	2,712,000	298,042	1,047,000	127,732	22,123	1,009,129	47,793	16,671	165,632		
Bar 3	727,680	81,467	298,120	34,914	5,365	264,829	13,359	4,052	30,938		
Bar 4	909,600	101,380	370,600	43,449	8,476	325,562	19,439	6,405	42,766		
Restaurant 5	1,301,040	145,517	507,120	62,365	11,949	494,732	25,708	9,020	56,578		
Bar 8	727,680	81,117	298,240	34,765	4,657	263,829	12,117	3,518	34,095		
Restaurant 9	1,125,600	125,947	450,241	53,977	8,669	420,505	19,900	6,548	48,482		
Bar 15	727,680	79,641	283,120	34,132	5,365	265,963	13,359	4,052	47,413		
Soccer 11	371,362	40,001	196,000	17,143	15,530	29,211	46,420	12,591	29,995		
Bar 11b	192,780	22,167	86,000	9,500	1,029	68,558	2,885	745	2,925		
Tennis 12	638,928	69,683	397,000	29,864	12,850	52,114	35,992	10,441	43,833		
Paddle 1	472,158	46,248	253,000	19,821	9,083	40,773	25,250	7,333	79,734		
Bar 10	909,600	100,735	364,120	43,172	8,921	325,713	20,536	6,738	48,586		
Climbing 16	521,600	55,295	304,000	23,698	12,808	44,728	33,476	10,254	50,149		
Basket soccer 7-11 17	306,791	32,270	173,935	13,830	8,109	25,489	22,932	6,553	31,783		
Hotel 18	2,632,672	302,365	922,880	129,585	295,898	568,960	467,418	198,336	43,128		
BMX 19	781,353	82,186	442,988	35,223	20,652	64,917	58,404	16,689	80,946		
Mall 20	129,113,924	12,646,718	29,164,557	5,420,022	689,122	76,803,327	1,931,973	498,985	1,959,219		
total	13,970,380	1,549,606	5,777,441	664,117	422,723	4,174,605	783,652	296,703	724,255		

The reports highlight the amount of extractable extra-profits from the location of the Mall, an intended use that cannot be considered entirely consistent with the Park’s recreational, cultural and environmental goals. For a critical interpretation of the results of the economic analysis carried out, we have distinguished the items of the Added Value (i.e. the remuneration of

the primary inputs, labour, land and capital) that corresponds to the “created wealth”, and the items of intermediate production (amortization, maintenance and management costs – the expenses for materials, energy etc.) that can be considered “destroyed wealth”. The fees currently paid were compared with the corresponding ones calculated by applying the

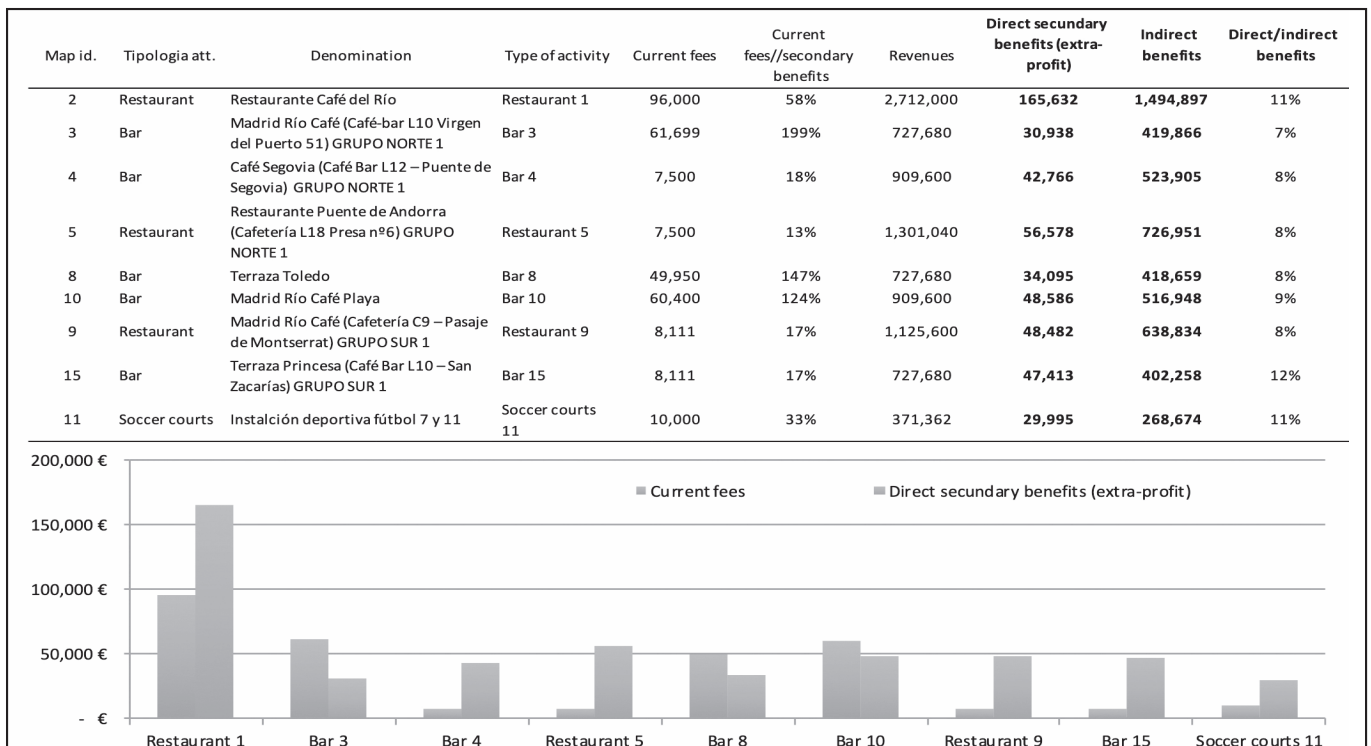


Figure 3 - Comparison between the current concession fees and the extra-profits calculated.

Table 3 - Impacts of the various economic and financial components on revenues. Specific and average values

Activities	Revenues	Profit	Personnel	Taxes	Interests	Management	Amortizations	Maintenance	Extra-profit
Restaurant 1	100%	11%	39%	5%	1%	37%	2%	1%	6%
Bar 3	100%	11%	41%	5%	1%	36%	2%	1%	4%
Bar 4	100%	11%	41%	5%	1%	36%	2%	1%	5%
Restaurant 5	100%	11%	39%	5%	1%	38%	2%	1%	4%
Bar 8	100%	11%	41%	5%	1%	36%	2%	0%	5%
Restaurant 9	100%	11%	40%	5%	1%	37%	2%	1%	4%
Bar 15	100%	11%	39%	5%	1%	37%	2%	1%	7%
Soccer 11	100%	11%	53%	5%	4%	8%	13%	3%	8%
Bar 11b	100%	11%	45%	5%	1%	36%	1%	0%	2%
Tennis 12	100%	11%	62%	5%	2%	8%	6%	2%	7%
Paddle 1	100%	10%	54%	4%	2%	9%	5%	2%	17%
Bar 10	100%	11%	40%	5%	1%	36%	2%	1%	5%
Climbing 16	100%	11%	58%	5%	2%	9%	6%	2%	10%
Basket soccer 7-11 17	100%	11%	57%	5%	3%	8%	7%	2%	10%
Hotel 18	100%	11%	35%	5%	11%	22%	18%	8%	2%
BMX 19	100%	11%	57%	5%	3%	8%	7%	2%	10%
Mall 20	100%	10%	23%	4%	1%	59%	1%	0%	2%
average	100%	11%	46%	5%	1%	26%	4%	1%	7%

proposed model (Fig. 3), highlighting a significant inconsistency between the fees requested by the Municipality also for the same types of activities.

It was also highlighted in what percentages the revenue is distributed among the various cost items. Finally, by grouping the activities by type, the different business profiles were identified based on the amount of the AV generated, and the way in which it is distributed among the different drivers of the revenue.

It has been observed, in particular, that sports activities seem to generate greater added value in terms of extra profits and employment (Table 3).

The comparison between the different activities

according to the value of the gross wealth produced (revenues) highlights the economic dimension of the Mall, the facility having the greatest economic impact, even if of little relevance to the purposes of the park (Fig. 5).

A similar result was obtained by grouping the activities by type: large restaurants, accommodation, small restaurants, sports (Fig. 6).

4.2 Sensitiveness and Scenario Analyses

Since profitability is sensitive to the variation of the financial and economic components of the

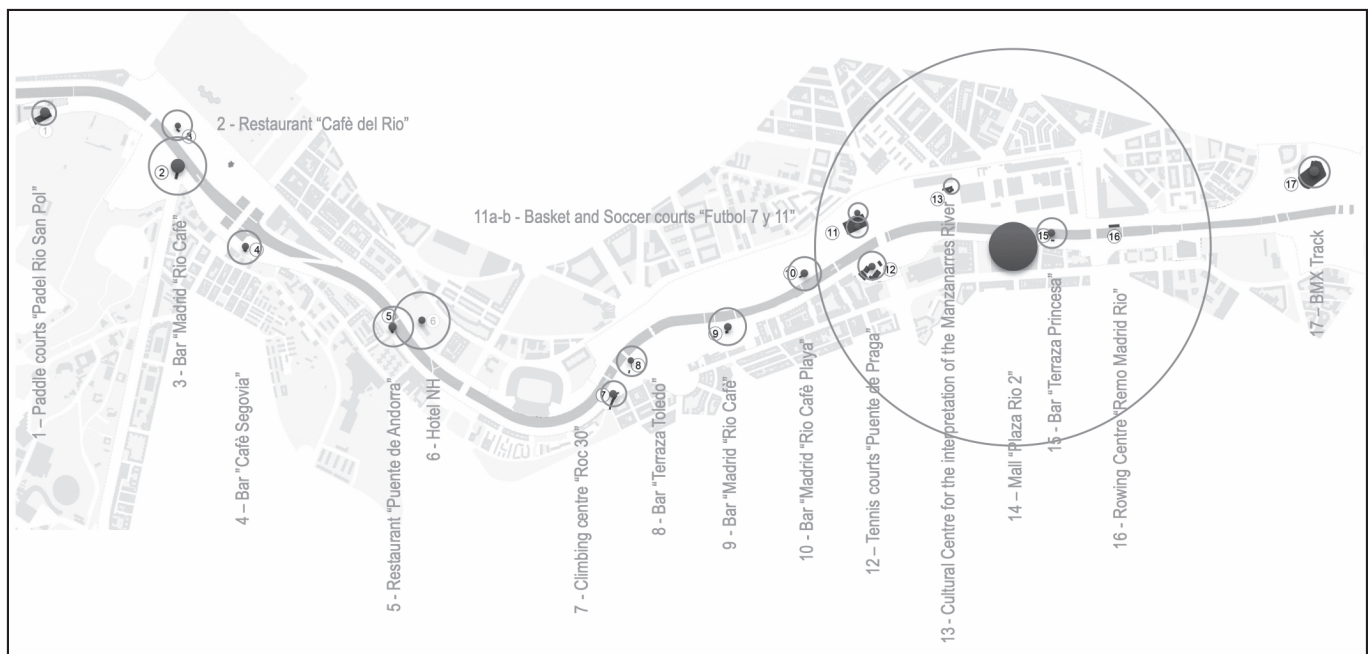


Figure 5 - Comparison of the different activities located in the park by revenues and indirect secondary benefits.

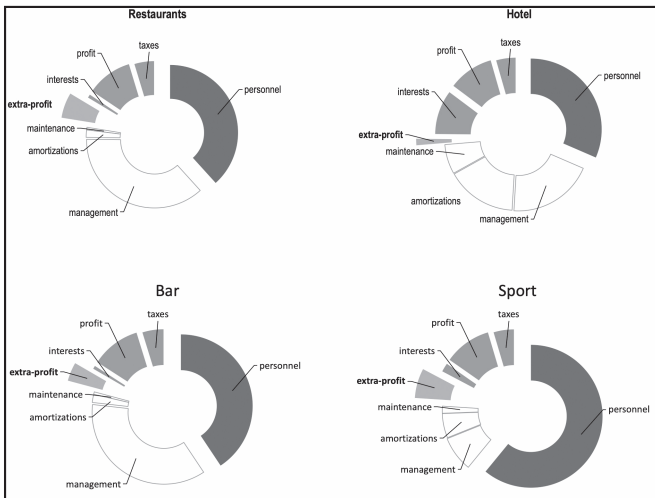


Figure 6 - Comparison between the different homogeneous groups of businesses as for the allocation of the revenues between costs, secondary direct benefits and secondary indirect benefits.

investments, a sensitivity analysis was carried out to measure the elasticity of the extra-profits with respect to the six main variables, identifying the kind of activities where the extra-profit is negative (Fig. 7a).

Revenues are the most correlated variable, being also the most uncertain; accommodation are the riskiest activities, unlike sports facilities.

Finally, for each activity a percentage range of the variables was defined, with respect to which the

change in the extra-profit was measured in monetary terms.

Also from this perspective the hotel is the most critical activity, showing negative extra profits in a wider spectrum of the range of the variables (Fig. 7b).

4.3 Risk Analysis

The risk analysis has taken into account the variability of the result with respect to the estimate carried out.

The six variables were varied within a set range to verify the risk for the expected values of the extra profit given the probability for each variable to assume the values of the interval itself (Manganelli, 2013).

The analysis was carried out with the Monte Carlo simulation, which consists in the repeated random extraction of groups of values of the critical variables, and therefore in the calculation of the extra-profit with the values extracted from each group (Kelliher, 2000). By making a sufficient number of extractions, the probability distribution of the extra-profit can be determined and then the degree of risk of the project is assessed.

Two simulations were performed on a sample of all activities:

- in the first simulation the function of the residual value and a triangular distribution of the values of the variables was implemented, with a result of € 674,000;
- in the second, the multiple linear regression function

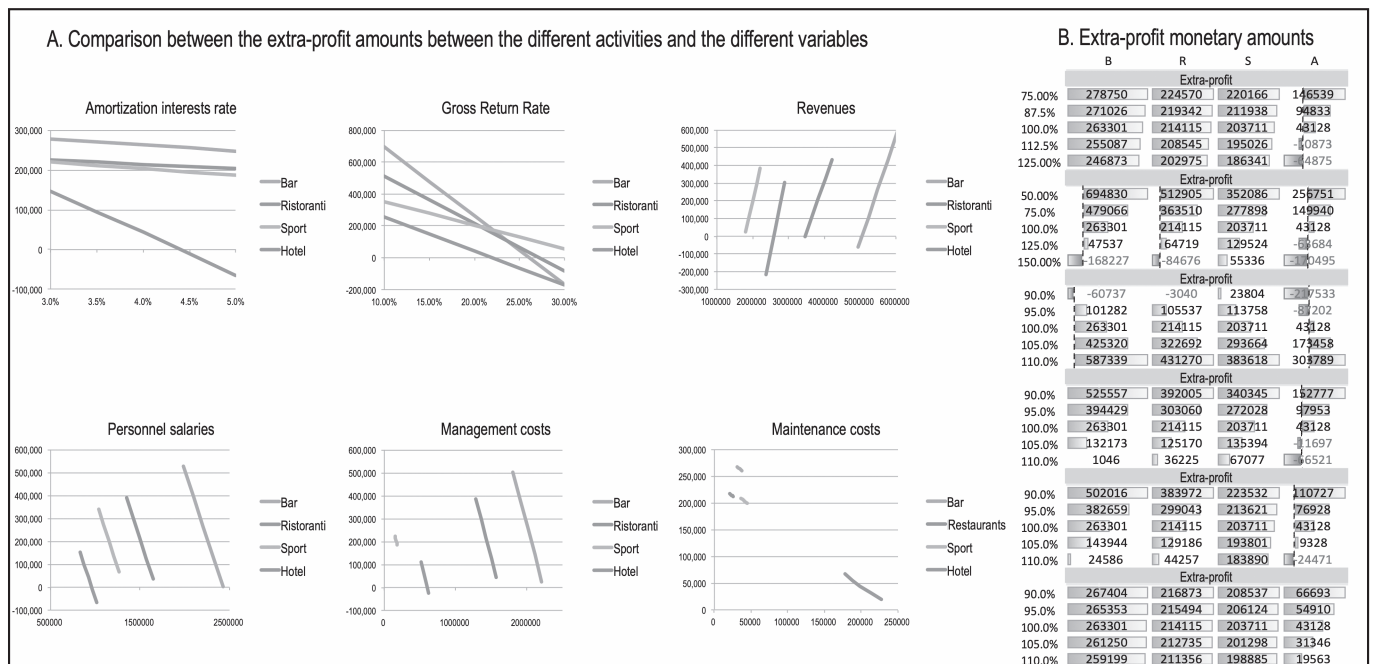


Figure 7 - A. Sensitivity analysis of the extra-profit (ordinate) for each group of activities with respect to the various economic-financial variables (abscissa, indicated by the title of the graphs). B. Scenario analysis: variation of the extra-profit given a range of variation of the six variables.

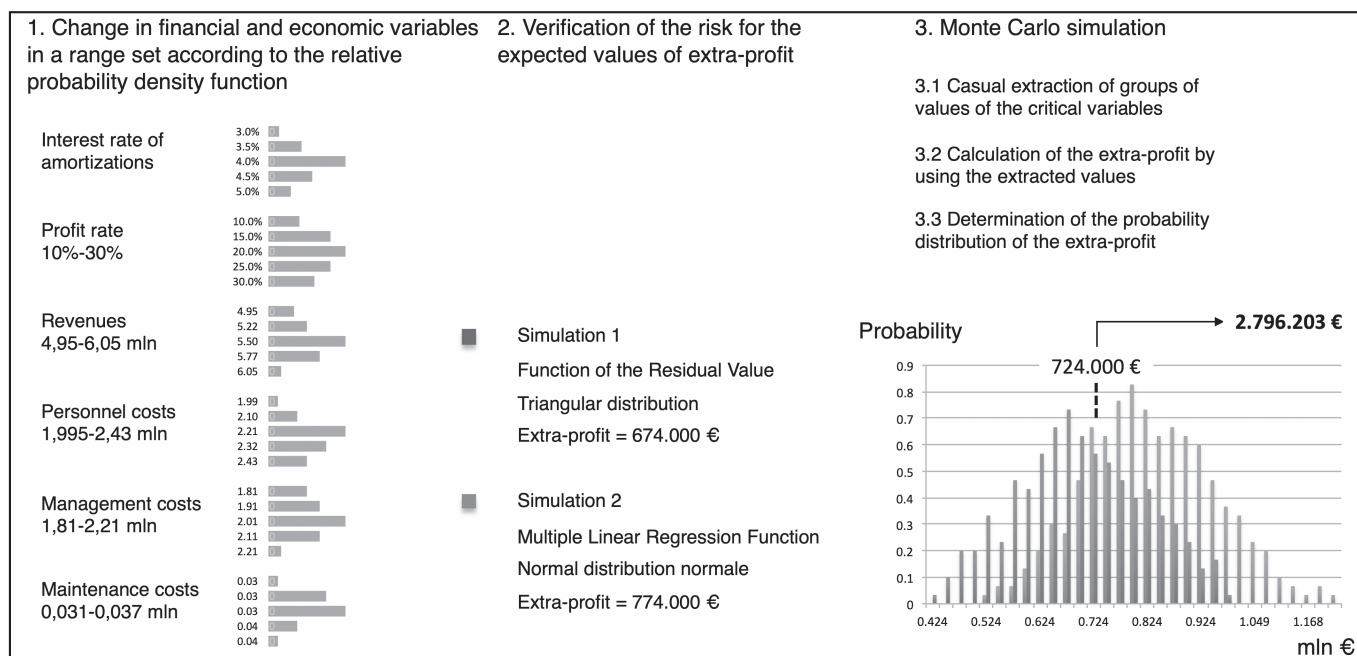


Figure 8 - Risk analysis.

and a normal distribution of the variables was implemented, with a result of € 774,000.

Although the second simulation is the most accurate, we have prudently assumed the average value between the two results, i.e. € 724,000 (Fig. 8).

This result was extended to all secondary activities, obtaining an extra-profit value of 2.8 million. In the hypothesis that the extra-profit can be entirely extracted in the form of concession fees, it would cover 58% of the park maintenance costs.

5. DISCUSSION AND CONCLUSIONS

5.1 Other Externalities: the Real Estate Industry

Some considerations following the more general experience of Cost Benefit Analysis in which this experiment is framed, concern the real estate externalities generated by the construction of the park, which have not been taken into consideration since, according to the available information, no adaptation of the cadastral rates has still been applied to internalize these ubiquitous effects of urban regeneration.

It is well known that the increase in the value of properties located in the area where a public investment is made is an important positive externality linked to the action of the project with respect to the surrounding environment, and consequently collects a significant share of the consensus around to the action of the public subject by the stock-holders. Any urban redevelopment action is reflected in the structure of the real estate market (Del Giudice and De Paola, 2012) whose econometric

analysis (Land Price Analysis) investigates the variations in the perspective of internalising the positive ones with local tax measures.

In the case of the Madrid Río Park the effects on the real estate market were analysed in 2015 in a study (Ortiz de Andrés, 2016) in which the territorial context of reference was intended as a specific market segment (Gabrielli et al., 2017; Napoli et al., 2017) – therefore considering as a principal element of homogeneity the extent of the real estate externalities generated by public works – within a 500-meter-wide buffer area having the river as axis. Several districts have been distinguished within it based on the conformation of the Park, prudently estimating an average differential of 500 €/m², which multiplied by a 2 million square meters of housing surface area has provided a value of indirect secondary benefit of one billion of Euro.

A similar capital gain would produce an overall increase in Real Estate Tax (IBI) – on average between 0.4 and 1.1% of the cadastral value (Finizio, 2014) – between 4 and 11 million euros a year, far greater than the rents extractable from secondary activities, which in turn exert an additional real estate pressure on the Park area; for this reason, even if the latter are an important aspect of the economic profile of the project, the constant adjustment of the cadastral estimates – taking into account both the effects of tensions on the capital markets on a macroeconomic scale, and the changes induced by urban transformations – should be a priority.

Some remarks following these last observations concern equity, not only as for the surplus allocation

model, but also as for the very purposes of the Park. Indeed, some inconsistencies have been observed:

- the dimensional and economic disproportion of the Mall in relation to all other activities, which overshadows the effectiveness of the latter, whose contribution in terms of secondary benefits corresponds, as a whole, to just slightly over one third of contribution of the Mall;
- the little contribution of the hotel, given the building size and its impact on the urban landscape, due to its location;
- finally, if the real estate externalities are not internalized, the construction of the park clearly supports the real estate sector in terms of increase in urban rent; if instead they were internalized, the management policy of this green infrastructure, and its very form, could change significantly; in fact, the secondary commercial activities would not be necessary, but rather a greater number of recreational and cultural activities could be funded.

5.2 Urban Rent, DCFA and the Reasons for Being Worth

An approach based on the Discounted Cash Flow Analysis – and in particular on the formation of the Business Plan, on the sensitivity, scenario and risk analyses – would seem to be able to argue only on accounting, thus resulting extraneous to the primary functions of the value judgment in the field of transformations of the urban landscape. In reality, this evaluative experience intends to state the strong relationship to the four aspects presented in the Introduction, with which we tried to highlight how deep the questions of the “quality of rent” are and, consequently, the importance of a critical approach the evaluation science needs to implement in order to keep itself “non-neutral”, so affirming its typical civil commitment. In particular, and in order:

- 1) the drafting of the business plan made it possible to explain the distributional variables of wealth (Guatri and Marinelli, 2002) produced by the activities located in the areas granted in concession; the determination of concession feestypically concerns the urban policy rather than accounting, aimed at mediating between economic-financial needs and prospects for functional qualification; one of the operational consequences is, for example, that the amount of normal profit is determined at the political level even with reference to the sustainability of the activity, working as an incentive in the case of activities more compatible with the purposes of the park and possibly less economically

attractive or more risky;

- 2) during the collection and critical interpretation of data some doubts arose as to the adequacy and consistency of the current license fees whose capitalization determined inconsistent values, sometimes meagre, sometimes very high. Therefore, the DCFA and the Business Plan have provided a benchmark based on the factual components of the economic-productive process, that has allowed us to balance the expected results; secondly, the scenario analysis and the risk analysis, allowed us to measure the “information effect” by calculating, in reverse, the level of the strategic variables corresponding to the highest values of the extra profits;
- 3) once the structure and the breakdown of costs and revenues were defined, the activities were distinguished on the basis of their contribution in terms of labour, capital and “land” (real estate capital asset), in the prospect of a social-urban policy in which the public work is the main driver of an economic processes supporting activities with higher quantity and quality of labour;
- 4) the DCFA specifies the financial component, represented by the depreciation of the fixed assets; the building asset, however long-lived, provides a greater degree of transformation; as such, it is not compatible with the above mentioned “intention of legacy”, especially in a climate, the current one, in which investments in urban quality are those with lower entropy, and as a consequence, those with greater potential value, preferring “the empty spaces than the full”;

This last observation – concerning how the park pursues the perspective of the green economy – recalls one of the main critical points of the action on the city and its multiple economies: on the one hand, the formation of the wealth supporting this action; on the other, the way in which the surpluses are redistributed. Hard financial constraints, the inefficiency of the public, and the consequent recourse to subsidiarity legitimize local administrations to mediate between natural and artificial (real estate) capital. Consequently, the relationship between natural and artificial units of capital can only be sustainable in those urban real estate contexts with high density of value and tension in prices.

For these reasons and within these boundaries, the tools coordinated in the framework of the DCFA appear to be consistent with the principles and the primary task of the “axiological approach” (Giuffrida, 2018a and 2018b), which highlights the the reasons why the search for novelty is a real “value experience” (De Monticelli, 2018): in this prospect, value (standing as the core of the project) is a matrix of which valuation is the irreducible imprint.

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