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The Financial Feasibility of a Real Estate Project: the Case of the Ex Tessitoria Schiatti

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Abstract

Over the last decade, italian real estate market has been characterized by a steady decline in prices and demand; the phenomenon, conjunctural to a broader crisis of the european and world economy, has affected every intended use and localization, but especially the residential sector, where, at least in Italy, over 70% of all of the sales and leases are concentrated. When the market is characterized by a high degree of uncertainty about the future evolution of his prices and, consequently, about the risk on the use of the capital, the assessment of economic and financial sustainability of real estate projects, especially if characterized by a high public value, becomes crucial in order to operate the right investment choices.
Interationally, the most widely used methodology for this assessment is the Discounted Cash Flow analysis (DCFA); this tool is based on the method of the discounted cash flows, namely on the discount of the balances between costs and revenues within the estimated duration of the investment.
Both in public and private sectors, an intervention is considered sustainable when it is able to generate a total balance of the positive cash flows (Net Present Value) and an annual percentage of return (Internal Rate of Return - IRR), that are greater than the ones generated by alternative investments at low (or no) risk (Prizzon, 1997).
The correct estimate of the costs and revenues generated from an investment becomes a crucial phase for the purposes of a reliable calculation of sustainability indicators. The difficulties concerning the costs and their accurate valuation are essentially attributable to the level of the information that is available at the time of the drafting of the project and, consequently, to the chosen method of estimation (synthetic in the concept and the design phases, analytical in the final and executive stages). When the project deals with former industrial areas, characterized by the presence of pollutants in the soil or subsoil, at the previous difficulties it is added also the uncertainty related to the correct estimate of remediation costs; these costs can only be evaluated with sufficient reliability when all the analysis related to the type of those substances have been developed and when the procedures of the intervention are defined.
In relation to these operating environments, this contribution is the result of the valuations of the economic and financial sustainability of some recovery and renovation's projects developed on the area of the former Tessitoria

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Schiatti, in Lentate sul Seveso (Italy) (that have) It has been carried out by the students of the Workshop in Architectural Project and Constructions of the Politecnico di Milano (proff. B. Croce, S. Cattaneo, L. Sdino).
These results confirm that because of the major cost of the reclamation, the feasibility of every proposed project cannot prescind from a public financial contribution that will cover those higher costs.

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Keywords: Reclamation costs; parametric analysis; economic sustainability; discounted cash flow analisys.

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1. Introduction

An investment can be represented by a sequence of costs (needed for the construction, transformation or purchase of a property and its management) and revenues (from the sale or lease of the property); according to a certain time-based analysis (year, semester etc.), the differences between positive values (revenues) and negative ones (costs) determine cash flows.

During the life of an investment (which can go from a minimum of two to three years, in the case of production and sale, to fifty-sixty years, in the case of a rental property), costs and revenues never occur all at the same time, but they are arranged along the entire length of the life-cycle of the asset. For this reason, it is necessary that this cash flow has to be discounted to the present value, meaning that all the values have to be the same as they were at the time of the measurements (usually reported at the beginning of the investment) through the adoption of an appropriate discount rate.

The Discounted Cash Flow Analysis (DCFA) follows this principle: the financial sustainability of an investment property is assessed by bringing back all the cash flows, (positive and negative), to the beginning, through the application of several formulas of financial mathematics which involve the use of a discount rate appropriately identified on the basis of the investor's profile and on the type/duration of the investment. The discount allows the calculation of the investment sustainability indicators (Net Present Value - NPV, Internal Rate of Return - IRR) which are then compared with minimum thresholds of acceptability set by the investor.

The use of this calculation tool allows the development of a system with many economic variables, such as; the market value of the buildings and the value of the land in accordance with their intended use; the costs of production and management of the intervention; the revenues expected by the promoter as a result of the sale or rental of real estate units developed/transformed; the time required for the realization/processing and marketing (or lease) of the assets; the financial costs for the investor's exposure towards the institution who lent the credit.

For the evaluation of the cost of the recovery plan of the former Schiatti factory, two main economic and financial indicators for the sustainability of a real estate investment have been taken as a reference: the NPV and the IRR. The NPV is used as the "primary parameter" because it represents a sort of minimum threshold that, if not satisfied, makes the further verification of the IRR unnecessary; the failure to meet the requirements related to the NPV determines, in fact, the lack of profitability of the entire operation. It indicates the increase in the value (or value added), assessed at the starting date, carried out by the investment; it is, therefore, the summation of the discounted cash flow which, as said, must necessarily be a positive value.

The second parameter, the IRR, is the profitability rate of the invested capital: in other words, the IRR is the rate that nullifies the NPV, making positive and negative cash flows equivalent after their actualization. In order to develop an investment, it is necessary that the IRR assumes a value that has to be greater than the percentage of profitability (minimum threshold) defined by the investor, composed of the sum of a rate necessary to compensate the expected inflation, and of a rate equal to the profitability of an investment with zero risk (or almost no) and of an aliquot that can reward the investment's risk.

The IRR's computational difficulties arise because we obtain a polynomial of "n" degrees by putting it equal to zero (where "n" are the years of real estate investment term); therefore, the polynomial can have more than one IRR