EVALUATING PROPERTY INVESTMENT PROPOSALS

A STUDY OF THE EVALUATION PROCESS WITHIN A CONSTRUCTION CONTRACTOR FIRM

BY TOMAS SVENSSON

Department of Real Estate Management
Lund Institute of Technology
Lund University, Sweden 2001

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SUMMARY

Introduction
Today, numerous real property investment projects, whose investment analyses all perhaps originally showed substantial prosperity, end up with a deficit. The author himself has, as employee in different construction firms, experienced several occasions where the project’s site management has been unable to meet the original budget, why he feels entitled to ask the following questions – “What are the reasons for this? Is the individual project’s profitability constantly overestimated or its’ risk underestimated? Is company management not capable enough to develop the properties at the estimated cost?”

In order to answer these questions, the thesis investigates evaluation methods and techniques discussed in business literature, and subsequently compares them with the methods used by decision-makers in a construction contractor firm. The purpose is to reveal erroneous behaviour and to revise and improve the evaluation methods used, as the author believes that the answer to the previously asked questions lays in the performance of the evaluations, not at the construction site. Other authors (e.g. Jansson, 1992) argue that the persons performing the analyses and evaluations habitually ‘decorate’ the performed evaluations in order to get ‘their’ proposals accepted. The author is not ready to draw the same conclusion, but instead believes that the analysts and the evaluators simply lack the experience in using more sophisticated, reliable evaluation techniques.

The thesis’ first two parts provide a literature review to reflect the academic opinions in capital budgeting in the field of economic evaluation of investment proposals. The third part deals with an evaluation of a property investment project, which is tested against the discussed theory. Finally, a discussion ending up in the conclusion of the thesis summarises the results.

Literature review
A firm is constantly confronted with the problem of deciding if a proposed use of resources is worthwhile in terms of forthcoming benefits. “The typical capital investment expenditure involves a commitment of current resources in order to secure a stream of benefits, i.e. a positive cash flow, in the future.” (Bierman Jr. & Smith, 1988). According to Clark et al (1989) the firm’s management must ensure to address the question of evaluating proposed expenditures in some systematic manner, since all organisations are more or less faced by a constraint on funds available for capital expenditure. The management must establish basic criteria for acceptance, rejection or postponement of investment proposals. Meredith and Mantel Jr. (2009) also stress that every investment proposal should be evaluated against standards and by methods established before the project’s inception. As investment proposals generally are accepted/rejected by the top management of the firm, whom is more or less aware of the different factors influencing the investment, it has to rely upon the economic evaluations prepared by their subordinates. As a consequence, in order to make
reasonable choices in weighing alternative investments, it is necessary to have comparable, uniform basis for evaluation (Levy & Sarnat, 1994).

There are a wide variety of methods discussed in business literature and this thesis deals with a few of them, focusing on methods applicable to project investments. This thesis handles two discounted cash flow (DCF) methods and two rules of thumb methods. The two primary discounted cash flow investment evaluation methods used are net present value (NPV) and internal rate of return (IRR). The rules of thumb methods discussed are payback period and return on investment (ROI). These four measures are equally applied to different hypothetical investment alternatives, and consequently three of them are excluded as reliable measures of investment worth. Since, according to Levy and Sarnat (1994), the time factor is the prime aspect when evaluating a project’s attractiveness; the two methods neglecting the time factor are excluded immediately. “The discounting for time is an essential part of any capital budgeting process, in order to evaluate a project” (Bierman Jr. & Smidt, 1988).

The net present value method and the internal rate of return method often lead to identical accept/reject decisions, but unless two investment criteria habitually lead to identical decisions, one cannot avoid having to choose between the two methods of measuring an investment proposal's desirability (Levy & Sarnat, 1994). Hence, it is impossible to be indifferent between the IRR- and the NPV-methods (Clark et al., 1989). The net present value method is thus the optimal method and the conclusion is that the NPV-method should be used as the sole method when evaluating investment proposals, regardless of them being independent or mutually exclusive.

As a firm seldom operates in a state of perfect certainty, the undertaking of an investment represents a risk (Eeckhoudt & Gollier, 1995). In order to cope with that risk, the firm must perform a risk analysis. The principal contribution of a risk analysis is to focus the decision-maker's attention on understanding the nature and extent of the uncertainty associated with the variables used in a decision-making process (Meredith & Mantel Jr. 2000). Pricing the risk facing a project is complicated due to the vast amount of data often needed, and many organizations rather include a safety margin in the discount rate, than calculate the risk as a single measure. Consequently, this thesis will instead treat risk through a nonnumeric (qualitative) point of view. The two methods discussed in the thesis are the sensitivity analysis and the decision tree method.

According to Bohren and Gjerum (1999), in practice the most adopted method when investigating financial effects connected with risk is the sensitivity analysis, which handles the risk in a pragmatic way. The objective of the sensitivity analysis-method is, as the name indicates, to survey how sensitive the project is to adjustments in the financial conditions the analysis builds upon. Thus, the result is not a single NPV figure based on a risk-adjusted cost of capital, but a basis of discussion (Ross, Westerfield & Jaffe, 1999). The result of the sensitivity analysis should be viewed as an alarm signal and a way to display where more information is needed (Bohren & Gjerum, 1999). However, the sensitivity analysis gives no information about the probability of a potential deviation in basic data nor considers possible management adjustments why an alternative method, the decision tree method, is introduced.

Uncertain environments create a need for flexibility. In the context of project analysis, that flexibility expresses the possibility to push forward decisions concerning the
project. The decision tree visualises the investment's different alternative results, enabling the decision-maker to calculate an expected value of the investment, weighing in the different results' probability to occur. To have flexibility in a project is analogous to be in possession of an option, i.e. the right, not the constraint, to perform a predetermined thing. The situation with flexibility is fundamentally different from all other examples in this thesis, where decisions about whether to invest in the project or not, and the design of the project, are made at time zero. To evaluate flexibility is therefore an issue of pricing the project's options to perform a predetermined thing. An option offers flexibility and creates value when the cost of the option is lower than the benefits it provides (Copeland, 1996). The option pricing approach recognises entrepreneurial flexibility and risk explicitly, but Lucios (2001) argues in his paper that the use of option pricing within real estate development is limited. The author of this thesis also recognises difficulties when applying the decision tree-method to the property investment case investigated, why he leaves the method partly unexploited.

Application of NPV and sensitivity analysis to a property investment case

As the net present value method is concluded being the optimal method when evaluating investment proposals, the author thus advocates using the NPV-method as the sole method when performing evaluations, regardless of the investments being independent or mutually exclusive. The net present value method is therefore utilised when the author revises a performed evaluation of a property investment case. As a complement, and in order to communicate the uncertainty and to expose the risk facing the project, the sensitivity analysis method is utilised in combination with a calculation of the expected value of the investment.

The purpose is to illustrate the results of different approaches when evaluating the attractiveness of the proposed investment and my conclusion is that the evaluation performed by Selmer Skanska in the specific project that I have studied, not explicitly illustrates the uncertainty of the project. The time factor has also been neglected when calculating the result of the project, making the calculated result hard to compare to other investments' results. Thus, the investment's relative attractiveness to other investments cannot be defined.

If one habitually uses the same measures when evaluating investment proposals, and one makes sure that the used measures are reliable, it is my opinion that the risk for undertaking less prosperous investments is reduced. The net present value method is easily interpreted and provides the evaluator with a single, reliable measure that can be straightforwardly compared to other investment's net present values. Combined with a proper qualitative evaluation, e.g. a sensitivity analysis, the risk of the investment can be displayed and hence no longer be completely unknown to the person making the evaluation/investment.