

Initial Feasibility as a Recommended Procedure

BY DONALD R. EPLEY, PH.D., CCIM, MAI

RECOMMENDATION

A counselor typically has enough initial available data on proposed income-producing property or development to estimate an initial feasibility (IF). The results tell the analyst and the client if the initial numbers will generate a minimum targeted value or rate of return to proceed further with a more detailed examination of the market. The IF combines the two concepts of investment analysis and financial feasibility analysis into one initial conclusion on a property's potential profitability. It is an essential tool for the analyst to use in a report that provides a counseling opinion or estimates value.

The IF is important if the analyst has initial data that has not been obtained through an extensive local market investigation. An initial figure might be available from observation, discussion with other professionals, several calls to owners or property managers, and reports from brokerage and appraisal firms. This could be the case with vacancy rates, operating expense ratios and net income ratios.

This recommendation contains two useful techniques that can be used for IF with the data that is available, often in the initial stages, of the analysis. It is a needed first step to decide if more time and expense is justified for a larger market investigation.

LITERATURE SUPPORT

Typical procedure relies heavily on the development feasibility concept recommended in the many publications by Graaskamp¹, who thought projects should produce an acceptable return to the contributors of

capital. The first step is a static rate-of-return analysis to produce numbers for the developer to determine the profitability of the proposed project. Initially, cost is compared to value, which enables the developer to inject market numbers on comparable properties. The second uses income and expense estimates to assess the adequacy of the projected income.

Three nested rules are found in the Graaskamp analysis.² First, the project must always have positive cash flow to remain solvent, initially from external sources, and eventually, from internal sources. Second, equity returns should be equal to or greater than the project's average equity return requirements from the first year to the end of the holding period. Third, it should be fine-tuned to maximize profit without negatively impacting the equity return.



About the Author

Donald R. Epley, Ph.D., CCIM, MAI, is a USA Distinguished Professor of Real Estate and Director for the Center for Real Estate Studies, Mitchell College of Business at the University of South Alabama in Mobile. He holds a doctorate degree in Regional and Urban Economics from the University of Missouri, and was awarded a MAI designation from the Appraisal Institute and a CCIM designation from the Commercial and Investment Institute. Epley served as president of the American Real Estate Society and on its board of directors for fifteen years. He was elected as a trustee of the Appraisal Foundation (Washington) and served a term on its executive committee. Epley has authored and co-authored nine textbooks, and has been the editor of two academic journals. He frequently is quoted in the media on his analysis of the local economy and real estate markets.

Initial Feasibility as a Recommended Procedure

This approach can be viewed as an initial “financial feasibility” approach to a new project. If the value does not exceed cost in the first year, and the developer’s expected income and expense figures do not meet expected levels, the project is not viable.

Emphasis on the financial analysis aspect of the total project is similar to the illustrations used by Fanning, Grissom, and Pearson in their text on market analysis.³ Financial feasibility is used as a critical step in the larger study to assure that the project is positioned in the competitive market place to generate an acceptable rate of return. Further, financial feasibility was used in an earlier text by Barrett and Blair on the recommended steps in a real estate market study.⁴

Feasibility, entitled “financial feasibility,” is a required step in a common highest and best use analysis used by appraisers to estimate value.⁵ The analyst focuses on the legal and physical use that produces income or return equal to or greater than the amount needed to cover various expenses.⁶

This recommendation in this article comes from the first step of the Graaskamp feasibility approach. The results normally provide sufficient information to make an informed decision to justify or cancel further market analysis and expense.

DATA REQUIRED

A comparison of the sections required in a full financial feasibility and the IF is useful to illustrate the initial required information:

FINANCIAL FEASIBILITY

- Initial market study;
- First-year project income and expenses;
- First-year debt service;
- Projected income, expenses and debt service;
- Year-of-sale income, expense and debt requirements;
- Simulation of selected income, expense and debt requirements;
- Calculation of rates-of-return and discount rates;
- Comparison to other competitive properties.

INITIAL FEASIBILITY

- Minimum targeted rates supplied by the client;

- Data on estimated construction cost, operating expenses, expected vacancy rate, and effective gross income;
- The typical financial feasibility analysis requires much more time, expense and expertise.

MINIMUM TARGETED VALUE AND MINIMUM TARGETED INCOME

The minimum initial target value must meet expected values, and the minimum initial target income must provide sufficient net income. Both must produce minimum expected levels simultaneously.

Static Part 1: Sufficient Value? Will the property create the minimum targeted value to justify further analysis?

Feasible rule: Project is initially feasible if:
minimum targeted value > actual total cost.

For example, a proposed new building is expected to earn an effective gross income of \$650,000, while operating expenses are projected to be \$235,000. Hard costs are estimated to be \$2 million, and soft costs will be 15 percent of hard costs. The site will cost \$1.8 million, and the overall capitalization rate, R_o is projected to equal nine percent. Is the project feasible?

Begin with:

$$\text{Value} = I / R_o$$

where I = net operating income in year one

$$R_o = \text{overall capitalization rate}$$

and \$650,000 minus \$235,000 = \$415,000 which is I ,

$$\text{and } \$415,000 / .09$$

$$= \$4,611,111, \text{ which is the minimum targeted value}$$

Total cost will equal \$2,000,000 hard cost, plus \$300,000 soft cost, plus \$1,800,000 site cost

$$= \$4,100,000 \text{ total cost}$$

The project is initially feasible since the minimum targeted value is greater than the actual total cost.

Static Part 2: Sufficient Income? Will the property in question generate the minimum targeted gross revenue to justify further analysis?⁷

Feasible rule: Project is initially feasible if,
minimum needed pgi < estimated actual pgi

Initial Feasibility as a Recommended Procedure

Begin with the estimate of value:

$$V = I/Ro$$

Substitute and rewrite:⁷

$$\text{minimum needed pgi} = Ro(\text{cost}) / (1-\text{vac})(1-\text{oer})$$

where:

I = net operating income in year one

pgi = potential gross revenue in year one

vac = vacancy loss, bad debt, and collection loss rate as percent of pgi

oer = operating expenses ratio, or operating expenses as a percent of effective gross income

(1-oer) = net operating income ratio, or net operating income as a percent of effective gross income

Consider an office building that has an expected construction and development cost of \$1 million. The vacancy rate, vac, is expected to be 10 percent, and the oer will be 40 percent. What is the minimum needed pgi to justify the development if the expected Ro is 10 percent?

$$\begin{aligned} \text{minimum needed pgi} &= [Ro(\text{total cost})] / [(1-\text{vac})(1-\text{oer})] \\ &= [.10(1,000,000)] / [(1-.10)(1-.40)] \\ &= \$100,000 / .54 \\ &= \$185,185 \end{aligned}$$

This same approach can be used when the available data is not the same. Consider a potential retail building with development costs equal to \$110 per square foot, excluding site costs that are expected to be \$20 million. The oer is expected to be 40 percent; stabilized occupancy will be 90 percent; and the Ro will equal 8 percent. The building contains 400,000 square feet, which will rent at \$26 per square foot. Will the project generate enough pgi to be feasible?

$$\begin{aligned} \text{minimum needed pgi} &= [.08(\$64,000,000)] / \\ &\quad [(1-.10)(1-.40)] \\ &= \$5,120,000 / .54 \\ &= \$9,481,481 \end{aligned}$$

$$\begin{aligned} \text{estimated actual pgi} &= \$26 \times 400,000 \text{ square feet} \\ &= \$10,400,000 \end{aligned}$$

The minimum needed pgi is less than estimated actual pgi, and therefore, the project is feasible.

MAKING A PROPOSED PROJECT FEASIBLE

An important final question to be answered is one that is always raised when a proposed project is found to be unfeasible. It is: "What can be done to make this project feasible?" The answer is found in simulation and market relevance.

Simulation: Simulation occurs when one variable alone is changed and all others in the analysis remain the same. The objective is to either: a) generate additional income or equity; or, b) reduce expenses. Either one, or in combination, will generate additional dollars within the project, which increases profit.

The usual list of variables includes the following:

Increase income or equity:

decrease initial purchase price
increase annual rents to increase income;

decrease annual vacancy losses to increase income;

increase projected sales price to increase equity.

Decrease expenses:

decrease acquisition expense to increase equity;

decrease projected sales expenses to increase equity;

decrease or postpone income taxes to increase income and equity;

lower annual debt service to increase income.

Changing any of these will have a noticeable positive impact on the ratios used in a rate-of-return analysis. They are done one at a time. All variables return to their original positions when each variable is changed. A more interesting and useful simulation can be conducted by altering two at once, such as increasing annual rents and lowering operating expenses.

Market relevance: Once the simulation is concluded, the analyst must return to the local market to determine if the changed variable is reasonable. For example, can annual rents be raised by five percent and not impact the vacancy rate? Is it more realistic to expect an increase in vacant units caused by the rent change?

Initial Feasibility as a Recommended Procedure

Each simulation result must be compared to the current local market and future markets. The goal is to find one simulated scenario that can be accomplished by management with acceptable income, equity and profits.

CURRENT ILLUSTRATION

The IF analysis has been very useful in the current recession where the investor is very reluctant to spend a large sum on a full financial feasibility study without a preliminary indication of the project's merit. Consider the example of a 70-unit apartment complex with the following initial field notes. The initial data and project information were obtained from the investor, the project's accountant and a loan officer. It was quickly verified by a local appraisal firm over a two-day period.

INITIAL FIELD NOTES**70-Unit Apartment Complex**

Individual investor	fee simple ownership
Expected capitalization rate	8.5 percent
Asking price	\$2,175,000
Potential income:	
20 1 bedroom/efficiency	\$400 monthly
30 1 bedroom/1 bath	\$450 monthly
20 2 bedroom/2 bath	\$500 monthly
Rental income annual	
expected increase	2 percent annually
Cost recovery allocation	25 percent site, 75 percent building(s)
Vacancy and collection loss	7 percent annually
Operating expenses	38 percent of gross operating income
Annual expected	
annual increase	3 percent
Purchase-money mortgage financing:	
First loan	\$1,305,814
9 percent, 20 years, monthly payment	
Expected cash down	\$425,000
Balance carried by seller	\$444,186
10 percent, 30-year, 5-year term	

Projected sales price holding	NOI one year past period divided by terminal cap rate
Projected sales costs	5 percent
Terminal cap rate	10 percent
Projected holding period	60 months
Owner's tax bracket	36 percent
Capital gains tax	15 percent
Cost recovery recapture tax	25 percent

Applying the Static Part 1 Feasible Rule Sufficient Value, the implied value is:

$$\begin{aligned}
 V &= I/R_o \\
 I &= \$378,000 \text{ potential rental income} \\
 &\quad - \$26,460 \text{ vacancy} \\
 &= - \$143,640 \text{ operating expenses} \\
 &= \$207,900 \text{ NOI} \\
 V &= \$207,900 / .085 \text{ expected } R_o \\
 &= \$2,445,882
 \end{aligned}$$

Since the minimum targeted value of \$2,445,882 is greater than the actual total cost of \$2,175,000, the project is initially feasible.

Results for the Static Part 2 Feasible Rule Sufficient Income are:

$$\begin{aligned}
 \text{Minimum needed pgi} &= .085(2,175,000) / \\
 &\quad (1-.07) (1-.4086) \\
 &= \$184,875 / .550002 \\
 &= \$336,135
 \end{aligned}$$

Since the minimum needed amount of \$336,135 is less than the estimated actual pgi of \$378,000, the project is initially feasible again. Further, both occurred simultaneously.

CONCLUSIONS

IF is needed to examine the client's targeted rates of return and performance levels using the initial data gathered in a proposed project. The feasible or non-feasible conclusion is valuable information in making a decision to spend the time and money to investigate the market and project further.

Initial Feasibility as a Recommended Procedure

The targeted rates are developed from recommendations contained in Graaskamp's earlier publications on feasibility analysis. The calculations begin with the property's value and are extended into minimum levels of income. ■

ENDNOTES

1. Graaskamp, James A. (1981), "Guidelines for Attributing Project Income to Real Estate Components," in "Proceedings from Concepts and Prospects for Policy Making in the 1980s," The Richard B. Andrews Symposium on Institutional Land Economics, May 21, 1981. Reprinted in Stephen P. Jarchow ed. *Graaskamp on Real Estate* (pp. 134–148), 1981. Urban Land Institute, Washington, D.C.
2. Ciochetti, Brian, and Emil Malizia (2000). "The Application of Financial Analysis and Market Research to the Real Estate Development Process," in *Essays in Honor of James A. Graaskamp: Ten Years After*, Research Issues in Real Estate, 8, pp. 135–185, American Real Estate Society.
3. Fanning, Stephen, T. Grissom, and T. Pearson (1994). *Market Analysis for Valuation Appraisals*. Appraisal Institute, Chicago.
4. Barrett, G. Vincent and John Blair, *How to Conduct and Analyze Real Estate Market and Feasibility Studies*, 1987, Van Nostrand, 366 pages.
5. Rabianski, Joseph. (2007). "Comments on the Concept and Definition of Highest and Best Use." *Real Estate Issues*, 32(1), Spring. pp. 39–45.
6. Appraisal Institute, *The Appraisal of Real Estate*, 13th Edition, 2009, p. 279.
7. This relationship is derived as follows:

Know that: $egi = pgi (1-vac)$

net income ratio, $noi/egi = (1-oer)$

$noi = Ro (costs)$

Write: $noi = noi$

Substitute: $pgi (1-vac) (1-oer) = Ro (costs)$

Solve for pgi: $pgi = Ro (costs) / (1-vac) (1-oer)$