

NPV at Risk Review on Investment Evaluation of Hotel Development in Block M Jakarta

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Abstract—Hotel Grandhika Blok M Jakarta built in 2013 and started operation in early 2016. In terms of investment, the function of the building is not necessarily the best. Therefore, it is necessary to do further study on the evaluation of hotel development, whether it remains operational as a hotel or there is a better investment alternative on the land of Grandhika Hotel Block M. The results of spreading questionnaires to five property experts consisting of academic and practitioners experts, are obtained the probability for hotel 100% optimists and 0% pessimists, Apartement 60% optimists and 40% pessimists, Offices 40% optimists and 60% pessimists. Then do the calculation Net Present Value (NPV). From NPV analysis obtained value NPV after 8 years for hotel NPV Rp. 7,788,146,628.49, apartments NPV Rp. 17,992,955,784.81 and office NPV Rp. 6,852,663,146.56. For a maximum productivity analysis of the value of the property at the end of the investment period, so the utilization of land for the hotel will provide productivity of 76.90%, for apartments provide productivity of 41.62% and office provide value of productivity of 18.16%. After obtained probability, productivity analysis and Net Present Value then taken decision by using decision tree method. The result is that the hotel as the best investment. From these results the best investment the investor can decide whether to continue operating the hotel or change functions the best alternative of the existing alternatives.

Keywords—Evaluation, Net Present Value, Productivity, Risks.

I. INTRODUCTION

Investment is an expenditure or sacrifice made for an expectation in the future. The cultivation of resources (including goods for sale) to obtain results in the future is concept of investment[1]. So it can be concluded that investment is an investment activity in an effort to obtain expected results in the future. In each of these investments there is a capital cost issued at the beginning of its implementation, it is necessary to carefully requiring planning and adequate analysis. This planning is done so as to avoid any losses in the selection of investment. Careful planning and adequate analysis are referred to as feasibility studies. Feasibility study is a study of whether a project (usually an investment project) is carried out successfully or not[2]. The uncertainty in investment leads to the considerations in investment evaluation decisions. Investment assessment criteria that are usually based on commonly used methods such as Payback Period (PP), Net Present Value (NPV), and Internal Rate of Return (IRR) are based only on expected returns.

In addition, cash flow estimates do not take into account the analysis of risk and uncertainty so as to produce only a single point estimate through a deterministic analysis. A stochastic approach can be done in an attempt to accommodate the uncertainty in the study of an investment. The parameters that resulted are the returns (mean) and risk (covariance).

One of the method that uses a stochastic approach to evaluate the feasibility of investment projects under uncertainty conditions is the NVP-at-Risk model[3]. In relation to the matters above to further finding, the researcher conducted a research by taking the object of Grandhika Hotel Blok M (Bintang Empat) PT Adhi Karya (Persero) Tbk, located at Jalan Iskandarsyah Raya No. 65, South Jakarta, DKI Jakarta Province.

The location is the choice of researchers because the Grandhika Hotel Blok M is the first hotel owned by BUMN Contractors works and new picnic in 2016. The location of this hotel was previously used as one of the division offices of PT. ADHI KARYA (Persero) Tbk which later developed into a hotel. In addition to the above above the ease of access to obtain data that is also a consideration of researchers chose the location.



Figure 1: Research Sites (Hotel Grandhika Blok M)

II. METHOD

A. Preliminary Studies

1. Problems and research are the importance of accurate objective assessment of the factors that influence the

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evaluation of the hotel's development and the better investment alternatives.

2. From the background, the writer then formulated the intent and purpose of the study. Among the aims and objectives of the study is to evaluate the construction of hotels and look for some of the best investment alternatives, so it can be decided whether to remain operational as a hotel or there is a better investment alternative at that location.
3. The library research is necessary in order to understand the theoretical underpinnings that support the objectives to be achieved in the research. As a reference and comparison, there are also reviews of relevant research results that have similar themes or have similarities in the subject matter.
4. Data collection was obtained from Grandhika Blok M hotel, market analysis report from property consultant and questionnaire conducted to obtain data in the form of opinion from predetermined respondents, this data is quite important data in this research.
5. Furthermore, from the market data selected alternative properties that allow to be built in the area, these alternatives are then further tested whether it is feasible to be selected as an alternative property.

B. Data Collection

Data collection is conducted according to the definition of the problem that has been defined. The data collected to support this study is distinguished into two parts, they are:

1) Primary Data

Primary data were obtained from field service using direct interview method to the hotel and questionnaire with expert respondents directly related to the investment either from academics or from practitioners.

2) Secondary Data

Secondary data is data obtained indirectly which is usually in the form of documents, files or archives associated with the project. Secondary data required in this study include data on parties who can be respondents, directly related to the implementation of the project as well as corporate documents and other publications containing information that supports this research.

3) Research Variables.

The research variables are factors that become indicators of a study. The research variables were obtained from literature studies (books, journals) as well as from interviews with related sources.

4) Types and Clarifications

In this study used secondary and primary data for each variable and indicators are planned.

5) Questionnaire

Questions in the questionnaires used as a means of data collection are based on the objectives the researcher wants to meet. The questionnaire consists of three questions. And each of these questions is given a place to fill in the value of the risk interest number consisting of the number 1 (strongly disagree), 2 (disagree), 3 (undecided), 4 (agree), 5 (strongly agree).

III. RESULT AND DISCUSSION

A. Alternative Re-Development Options

Based on the analysis of local market around the location and direct observation by the researcher around the location and land planting by SOEs, it can be concluded with the hotel, other alternatives that can be selected for Re-Development in the area are Rented Apartment and Office Rent. To know and persuade the selected alternatives, an analysis of criteria such as location, zoning and landform is required.

B. Analysis of Building Area and Height

Based on the information that the researcher obtained from the Department of Spatial Planning and Building Administration of South Jakarta on the regulation or regulations that the area has a wide KDB 75% of its area. Then the maximum area that can be used in alternative Re-Development is 2.024.25 m². In the Floor Coefficient of Building (KLB) the maximum KLB Grandhika Hotel is 5 then the maximum allowable building area is 13 495 m². While KKOP Agreement (Operation Safety Operation Area) due to the location of the Hotel Grandhika Blok M are in the area of flight line of the Halim Perdanakusuma air base. According to the results of technical studies on the operational flight plan offices and hotel buildings allowed with a height of ± 149.092 meters to the local ground level (AGL) or + 151.00 meters to the threshold lowest runway Halim Perdanakusuma Airport in Jakarta (AES / 18) or +180.92 meters to MSL. On the elevation Building that based on the Elevation Principle issued by the Office of Spatial Planning and Building of South Jakarta Municipality Administration and the Approval of Flight Operation Area of Halim Perdanakusuma Airport, the location of the Grandhika Blok M hotel is approved for 16 floors.

C. Estimated Alternative Investment Development Cost

Estimated investment costs for each consist of land acquisition, licensing fees, planning costs, construction costs and facility development. Land acquisition costs, licensing fees and land acquisitions are assumed to be the same as the existing ones. Construction cost for each alternative in this research is done by unit price approach per m² of building. Calculations in this way are intended to provide an overview of the estimated cost of building and construction of a high building based on the average building price per m²[4]. For buildings with higher number of floors can be used empirical formula as follows:

$$BBn = BBo \times (1 + 0,0237)^n \quad (1)$$

where :

- BBn = the base price for a floored building n
- BBo = base price for non-storied buildings
- N = number of floors of buildings

Furthermore, for planning cost is assumed to be 15% of construction cost. While the cost of developing facilities for the development cost of facilities is assumed to be 5% of the construction cost[4].

TABLE 1.
APARTMENT COST INVESTMENT ESTIMATION

| No | Job Description | Amount (Rp) |
|--------------|------------------------------|--------------------|
| 1 | Land Acquisition | 59.657.788.000,00 |
| 2 | Licensing and Insurance Fees | 7.465.500.000,00 |
| 3 | Planning Cost | 10.894.551.688,00 |
| 4 | Construction Cost | 72.630.344.586,88 |
| 5 | Facility Development | 3.631.517.229,34 |
| TOTAL | | 154.282.701.504,26 |

TABLE 2.
ESTIMATED COST OFFICES INVESTMENT

| No | Job Description | Amount (Rp) |
|--------------|------------------------------|--------------------|
| 1 | Land Acquisition | 59.657.788.000,00 |
| 2 | Licensing and Insurance Fees | 7.465.500.000,00 |
| 3 | Planning Cost | 13,073,462,025.64 |
| 4 | Construction Cost | 87,156,413,504.26 |
| 5 | Facility Development | 4,357,820,675.21 |
| TOTAL | | 171,713,984,205.11 |

D. Revenue and Expenses

From the data of Profit & Loss report of Hotel Grandhika Blok M period 2017 obtained that average of hotel revenue per month equal to Rp. 4,421,678,280.- so it can be calculated the hotel revenue year is Rp. 4,421,678,280.- x 12 months = Rp. 53,060,139,360.-. Based on Indonesia Hotel Watch, 2014-2016, the annual increase of hotel rental price is planned at 4%.

For the apartment and offices revenues, the resource revenue are provided from rent house per m2 floor & service charges. Charges service charges for construction of buildings, general facilities, park, cleans and securities calculated per m2 square rent. Specialized establishment of expenses from operational cost and maintenance. Occupancy, rental rates and service charges are obtained from Jakarta Property Market Report Colliers International, 25 April 2017. The average occupancy rate for the apartment is 65.00% with an average rental charge of Rp. 218,625.00 / m2 / month, and service charge rata2 Rp. 12,365 / m2 / month So for rental income for the first year is Rp. 1,006,212,261.00. While, occupancy and rental rates and service charge offices can be seen from the data Jakarta Property Market Report Colliers International, April 25, 2017. The average occupancy rate for offices is 85.40% with an average rental fee of Rp. 214,607.00 / m2 / month, and service charge of Rp. 60,000, - / m2 / month So for rental income and service charge for the first year is Rp. 5,131,936,051.00

E. Cash Flow Analysis

Cash flow analysis viewed from the import and expenditure of any years that will be implied so Net Operating Income (NOI) or net revenue early years. Discounted cash flow by means of NOI multiplied by discount factor for each year. The NPV itself can be deducted from the sum of Discounted Cash Flow each year from the beginning of the investment until the end of the investment period minus the initial investment value. NPV obtained

with the way NOI entry discount factor interest rate / marr obtained from safe rate allowing with risk levels, safe rate obtained from some average of interest rate of deposit bank in Indonesia risk level is assumed with safe rate. Safe Rate is obtained from the average of several bank deposit rates in Indonesia which can be seen below:

TABLE 3.
BANK DEPOSIT INTEREST RATE

| Bank Name | Interest Rate |
|-----------|---------------|
| Citibank | 4.80% |
| BCA | 5.60% |
| Bukopin | 6.30% |
| Mandiri | 6.10% |
| Permata | 5.20% |
| HSBC | 5.00% |
| | 5.50% |

Based on the above table obtained a safe rate of 5.5%. The risk level is assumed to be the same as the safe rate of 5.5% so that the interest rate / MARR 11% is obtained. In this study investment costs obtained from capital. Cash Flows for Offices can be seen in Appendix 10. Based on the financial feasibility test that can be seen in the cash flows of each building, Hotels, Apartments and Offices are said to be financially viable as having NPV greater than 0. Furthermore, financially will proceed on the aspect of maximum productivity.

F. Maximum Productivity Analysis

Maximum productivity seen from the increase in the value of the highest land due to the establishment of a building. The value of land is obtained by the method of land acquisition where the value of the land is the property value minus the value of the building. Building value is derived from the calculation of building investment. The value of the property is obtained from Calculation of building investment. Property value gained from Net Operating Income (NOI) at the end of the investment divided by the planned Cap Rate of 11.00%.

TABLE 4.
LAND PRODUCTIVITY

| Description | Hotel | Apartment | Offices |
|--------------------|--------------------|--------------------|---------------------|
| Property Value | 226,308,717,296.46 | 179,110,919,361.00 | 182,546,441,594.687 |
| Building Value | 120,771,837,555.53 | 94,624,913,504.26 | 112,056,196,205.11 |
| Land Value | 105,536,879,740.93 | 84,486,005,857.38 | 704,9024,5389.58 |
| Initial Land Value | 59,657,788,000.00 | 59,657,788,000.00 | 59,657,788,000.00 |
| Land Productivity | 76.90% | 41.62% | 18.16% |

G. Alternative Investment Probability Analysis

The method that is used used is a data collection through questionnaire, in analyzing through exploring the claims that was obtained from a questioner in the form of the table.

Values that are being in questionnaire 1 - 5 with clarification

- Value 1: highly accepted
- Value 2: do not accept

Value 3: neutral
 Value 4: agree
 Value 5: highly agree

For total value 9-26 grouped in pessimists and criteria 27 - 45 as the optimists. After that, probability is searched by using the mean method. The result obtained:

Apartment
 Optimist: 3/5 = 60%
 Pessimist: 2/5 = 40 %

Hotel
 Optimist: 5/5 = 100%
 pessimist: 0/5 = 0%

Office
 Optimist: 2/5 = 40%
 Pessimist: 3/5 = 60%

From the results that the researcher obtained above, indicates that the market strongly reacted positively on alternative Hotels. While for alternative Apartments more than 50% of the market reacted positively. And for alternative Offices more than 50% of the market showed a negative reaction.

H. Respondents Demographics

Based on questionnaires submitted to the experts by researchers, obtained data that reveal the distribution of respondents based on the demographics of respondents as follows:

1) Gender

There are five respondents, 4 male respondents and 1 female respondents. By these respondents are dominated by men.

2) Higher Education

There are 1 high educated respondents hold Ph.D, 2 respondents have MT and MM degree and 2 respondents hold bachelor degree.

3) Age

Respondents with age range > of 51 years amounted to 2 respondents, respondents with age range 41-51 years amounted to 3 respondents. So it can be concluded that the respondents of this study is dominated by respondents aged between 41-51 years.

4) Job background

Respondents from academics amounted to 1 person, property practitioners amounted to 4 people, this indicates that this study is dominated by responded with practitioner background.

I. Decision Tree

In taking a best investment decision that can be done in several ways, and one of them is by making a decision tree. From the analysis and the results of discussion on risk and NPV then the researcher made a decision tree as follows:

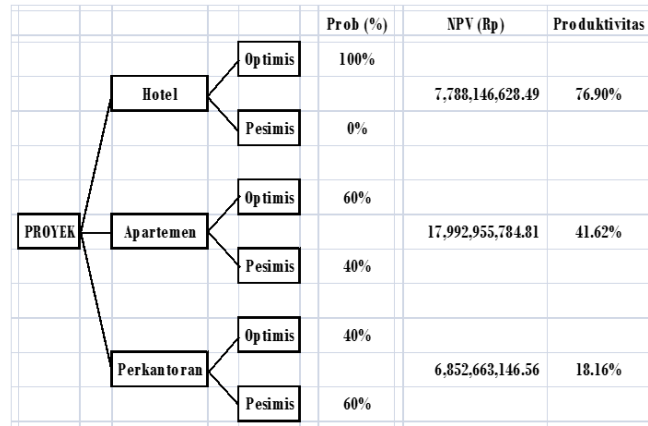


Figure 2. Decision Tree

IV. CONCLUSIONS

From the entire content of this thesis, the researcher can take some conclusions that in decision making the best investment needs to receive the risk of an investment exist, this risk is only viewed from the market reaction of that investments. Reaction that happens analyzed with a statistical probability approach, so it can obtain the risks of each investment. In deciding a best decision other than taking into account the risks, then we need to also take into account the benefits to be gained. In this case the Net Present Value (NPV) method is used.

From the aspect of Maximum Productivity, the value of the property at the end of the investment period of land use will be the productivity of 76.90%, if it is established Apartments will provide productivity of 41.62% whereas if the establishment of the Office will provide Productivity value of 18.16%. After performing the analysis of the Net Present Value and Maximum Productivity Analysis then it can be done the last stage in determining a Re-development decision is best, that is by making a decision that hotel investment is the best investment decision. So continuing the operational of hotels that are already operating from early 2016 is the best investment choice in the location area.

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