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Highest and Best Use Analysis: Case Study of Vacant Land in Denpasar

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ABSTRACT

For the last few years, the property business has developed quite rapidly in Denpasar City, the capital of Bali Province. Jl. Teuku Umar Barat is one of the main roads in the city. It has several vacant lands which have not been utilized so that they do not provide maximum economic benefits. To maximize the economic benefits Highest and Best Use (HBU) study is needed. The results of HBU analysis show that the alternative mixed-use of a hotel with 3,645 m² and a shophouse with 8,910 m² will result in an NPV value of IDR 187,637,261,135 and the land value of IDR 120,932,881,135 or an increase of 39.11% from its initial value.

Keywords: Highest and Best Use (HBU), Land, Property, Valuation

INTRODUCTION

Denpasar City as the capital of Bali Province, in the last few years the property business has experienced a rapid development. People high mobility of to and from Denpasar influences the high interest in investment in the property sector. Since tourism substantially contributes to government revenue (Runtunuwu, 2020), Bali's tourism industry and its derivatives remain the main driving factor for economic growth in which tourism accommodation, such as hotels and villas, as well as tourism supporting facilities, such as shops, restaurants and malls, dominate its property business development.

Jl. Teuku Umar Barat is one of the main roads in Denpasar, connecting Central Business District (CBD) with the Petitenget tourism area in Badung Regency. This area provides several hotels in which for last few years, the property business development has begun to increase along with shopping areas construction. Nevertheless, its existing vacant lands obviously do not provide any economic benefits. Therefore, Highest and Best Use (HBU) study is beneficial to maximize their economic benefits.

HBU covers the most possible and optimal use of an asset, which is physically possible. It has been considered sufficiently, legally permissible, financially feasible to produce the highest productivity value of the property ("Kode etik penilai," 2018, p.10). The HBU analysis is to determine whether the property is utilized for its most profitable permitted use in a growing area.

Uncommonly, a change of structure is best to maximize the value of the land (Detty, 2011, p. 58). Mahardika et al (2013) argued that HBU would yield the highest benefits if

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it was developed as a mixed used building as a hotel and souvenir shop. Bravi & Rossi (2012) contended that the flexibility in real estate investment is related to the alternative uses embedded in the land and to the characteristics of the building. Thus, the value of vacant lands should bespeak not only the value based on best immediate use, but also its option value, if the development is delayed and the land is converted into best alternative use in the future. It shows the limits of traditional analysis (Discounted Cash Flow Model) to capture flexibility in the real estate investment.

RESEARCH METHOD

The Highest and Best Use (HBU) principle is the basic theory of property valuation, with the market value being established on the assumption that an object is in demand in its segment of the competitive market, its use is justified, the object meets the HBU criteria and the value potential of the object. It comprises four criteria including legally permissible, physically possible, financially feasible, and producing the highest productivity. Figure 1 adequately describes these criteria.

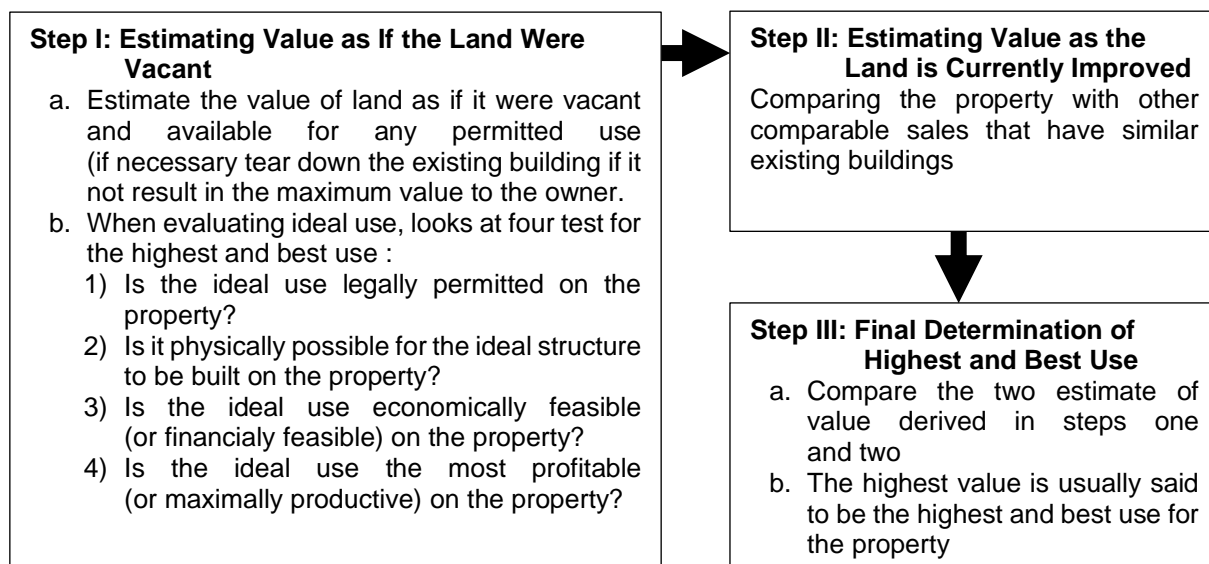


Figure 1. HBU Frameworks

Source: Detty (2011)

Ozerov et al (2017) explained that in selecting the HBU of investment assets, the optimal number of floors of the enhancement must be determined for legally allowed and physically possible options, cash flows must be substantiated in detail, as well as their change and rate of return on capital. In addition, the uncertainty of the initial data must be considered and the relative error of the expected value must be estimated.

Discounted Cash Flow (DCF) analysis is a procedure in which the discount rate applied to the series of revenue streams and reversion. DCF is suitable for use on some regular and irregular income patterns. The disadvantage of DCF is greatly influenced by the projection of income, as changes in revenue projections will have a significant effect on the property value ("The Appraisal of," 2008, pp. 539-540)

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DCF is simply referred to multiperiod income discounting method, which is a model based on the idea that financial investment is the value of the total benefits which would come to be provided to the owner, each discounted to a present value at a discount rate which reflects the time value of money and the level of risk on the expected number. Prawoto (2012.443) proposed the formula to convert future benefits to present value by discounting the projected cash flows of income, as follow.

$$\text{Present Value} = \frac{\text{NOI}_1}{(1+i)^1} + \frac{\text{NOI}_2}{(1+i)^2} + \dots \dots \dots + \frac{\text{NOI}_n}{(1+i)^n} + \text{TV} \quad (1)$$

where,

NOI : Net Operating Income

i : Discount Rate

TV : Terminal Value

N : Year

RESULTS AND DISCUSSION

This section presents all analysis results comprising the steps, and the discussion. The steps are value estimations, economic feasibility estimation, and profitability estimation. The discussion of each is brought up below.

Step One: Estimating Value as if the Land Were Vacant

The object of research is a vacant land located at Jl. Teuku Umar Barat, Padangsambian Village. The site has irregular shape with elevation equal to the road surface and flat topography. The valuation of vacant land is carried out using a comparative market approach with the market data comparison method. Based on market data around the location and after several adjustments to the characteristics of the object, the estimated value of the vacant land is IDR 86.931.000.000.

To determine the appropriate alternative properties to build, interviews and questionnaires were given to parties who knew well the surrounding area, namely residents and the government. The initial alternatives included in the questionnaire were obtained from direct observation by taking into account the types of properties which have been built around the object location and were permitted by government regulations. Based on the questionnaire, the types of property with the highest points were hotels, restaurants and shophouses. These three alternatives will be used as a commercial property in the form of a mixed-use building. Analysis of the legal aspects is carried out to ensure that the alternative development selection that has been carried out and the building planning is in accordance with government regulations and the Regional Spatial Plan of Denpasar City.

In accordance with the Regional Regulation of the Denpasar City Government No. 27 of 2011 about Regional Spatial Plan of Denpasar City for 2011-2031, the research object is in the Allocated Trade & Services Area, with property development permitted for tourism accommodation, shophouses, malls, markets, hospitals and educational facilities. The provisions for the building coverage ratio for the location of the Object are 50% from land. The provisions for the floor average ratio are five times of the building coverage ratio, 16 meters from the road axle, and the maximum building height is 15

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meters in 5 floors. The provisions for land plots of 5,000 m² to 10,000 m², public facilities in the form of roads with a width of 8 meter to 10 meter are required. By these requirements, the available alternatives are presented in Table 1

Table 1. Alternative Plan

	Alternative I (m ²)	Alternative II (m ²)	Alternative III (m ²)
Hotel	100%	0%	35%
Shophouse	0%	100%	65%
1 floor	3.715	3.672	3.699
2 floor	3.715	3.672	3.699
3 floor	3.715	3.672	3.699
4 floor	3.715	-	729
5 floor	3.715	-	729
Total	18.575	11.016	12.555

Based on the aforementioned provisions, the properties permitted to be built are commercial properties, such as five-story hotels and restaurants high, and three-story shop buildings with a public facility of a 10-meter road.

In addition, physical aspect analysis includes object location, land accessibility, size, elevation, topography and land shape. The results of direct observation, the area is located in one of the trade centre areas in Denpasar City. It has hotels, shops, and warehouses. Legally permitted products are then screened at a later stage. Physical studies, namely what uses are suitable or physically possible to develop on the site, are made under the following considerations.

- Site Characteristic
 - Shape of Land : Irregular
 - Topography : Flat
 - Elevation : The same as road surface
- View : Cityscaped
- Accessibility : Easy access from main road
- Surroundings : Well developed with various trade & service facilities
- Infrastructure : Network availability of electricity, water, telephone and internet

Based on the characteristics and the location of the object, it concludes that hotels (alternative I), shophouses (Alternative II), and a combination of shophouses and hotels (Alternative III) are physically possible to develop.

Step Two: Estimating Land Value of Economic or Financial Feasibility

Legally permitted and physically possible products will go the next stage, namely the financial aspect. It emphasizes the product must be financially feasible. This study defined what property products are marketable and financially feasible to develop on the site. Thus, market studies were carried out by considering economic conditions and growth, demand and supply of property, property prices, target markets, and competitors

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(see Table 2 – Table 5). In addition, the study of financial aspects, analysis of development costs, revenue analysis, operational cost analysis, financial projections, and feasibility analysis (NPV, IRR, & B / C Ratio) were conducted.

Table 2. Market Analysis (Alternative I)

Type of rooms	Superior Room	Deluxe Room	Family Room
Area (m2)	20	25	30
Number of Rooms	141	250	100
Rate	IDR 339.000	IDR 424.000	IDR 571.000
Facility	Meeting room, restaurant, public pool		
Revenue			
Food & Beverage	43,00%	of Room Revenue	
MOD	5,00%	of Room Revenue	
Variable Cost			
Rooms	20,00%	of Room Revenue	
Food & Beverage	50,00%	of Food & Beverage Revenue	
MOD	30,00%	of MOD Revenue	
Fixed Cost			
General & Administration	10,00%	of Total Revenue	
Marketing Fee	7,00%	of Total Revenue	
Heat, Light & Power	7,50%	of Total Revenue	
Repairs & Maintenance	2,50%	of Total Revenue	
Management Fee	2,00%	of Total Revenue	
Incentive Fee	2,50%	of Gross Operating Income	
Reserve for Replacement	2,00%	of Total Revenue	
Insurance	0,10%	of Building Cost Reproduction New	
Property tax			

Table 3. Market Analysis (Alternative II)

Type of Shophouse	Area A	Area B	Area C
Area (m2)	162	162	162
Number of Shophouse	6	36	26
Price	IDR 2.651.940.000	IDR 2.575.800.000	IDR 2.511.000.000
Revenue			
Shophouse sales estimate for 3 years			
Expenditure			
Administrative & General	5,00%	of Total Revenue	
Marketing	2,50%	of Total Revenue	
Property Profit/Incentive	10,00%	of Total Revenue	

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Table 4. Market Analysis (Alternative III)

A. Hotel			
Type of rooms	Superior Room	Deluxe Room	Family Room
Area (m2)	20	25	30
Number of rooms	72	25	10
Rate	IDR 339.000	IDR 424.000	IDR 571.000
Facility	Meeting room, restaurant, public pool		
Revenue			
Food & Beverage	43,00%	of Room Revenue	
MOD	5,00%	of Room Revenue	
Variable Cost			
Rooms	20,00%	of Room Revenue	
Food & Beverage	50,00%	of Food & Beverage Revenue	
MOD	30,00%	of MOD Revenue	
Fixed Cost			
General & Administration	10,00%	of Total Revenue	
Marketing Fee	5,00%	of Total Revenue	
Heat, Light & Power	7,50%	of Total Revenue	
Repairs & Maintenance	2,50%	of Total Revenue	
Management Fee	2,00%	of Total Revenue	
Incentive Fee	2,50%	of Gross Operating Income	
Reserve for Replacement	2,00%	of Total Revenue	
Insurance	0,10%	of Building Cost Reproduction New	
Property tax			
B. Shophouse			
Type of Shophouse	Area A	Area B	Area C
Area (m2)	162	162	162
Number of Shophouse	6	24	25
Price	IDR 2.651.940.000	IDR 2.575.800.000	IDR 2.511.000.000
Revenue			
The sales of the shophouse estimate for 3 years			
Expenditure			
Administrative & General	5,00%	of Total Revenue	
Marketing	5,00%	of Total Revenue	
Property Profit/Incentive	10,00%	of Total Revenue	

Table 5. Financial Analysis

	Alternative I	Alternative II	Alternative III
Investment	IDR 187.258.600.000	IDR 36.978.980.000	IDR 66.704.380.000

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Property Value (Improved)	IDR 276.637.783.357	IDR 157.378.772.796	IDR 184.933.663.911
IRR	6,09%	12,85%	14,51%
B/C Ratio	1,48	4,26	2,77
Discount Rate	12,25%	12,17%	12,21%
Conclusion	Not Feasible	Feasible	Feasible

Step Three: Estimating Value for the Most Profitability (or Maximally Productive)

The final stage is maximum production. Alternative development products with the highest NPV (Net Present Value) are optimally produced products and are the concluded products in this analysis or those with the highest and best development products on the site (see Table 6).

Table 6. Maximum Productivity

	Alternative I	Alternative II	Alternative III
Property Value (Improved)	IDR 276.637.783.357	IDR 157.378.772.796	IDR 187.637.261.135
Development Cost	IDR 187.258.600.000	IDR 36.978.980.000	IDR 66.704.380.000
Land Cost	IDR 86.931.000.000	IDR 86.931.000.000	IDR 86.931.000.000
Land Value	IDR 89.379.183.357	IDR 120.399.792.796	IDR 120.932.881.135
Productivity	2,82%	38,50%	39,11%

Development alternatives that pass the testing of legal aspects, physical aspects, and financial aspects will be chosen as the highest productivity since land productivity is an increase in land value as a result of property development on it. To obtain the land value after its construction, the property value is obtained from the NPV value minus the building investment costs. The results of productivity calculations are presented in Table 6. It shows that the highest productivity is obtained from Alternative III, namely hotels (35%), and shophouses (65%). Alternative III provides an increase in land value by 39.11% or IDR 34,001,881,135 more than before.

CONCLUSIONS

The Highest and Best Use analysis results lead us to a conclusion that the lands on the research object are permitted under the regulations for commercial properties such as tourism accommodation, shop houses, malls, markets, hospitals and educational facilities. Among the alternative questionnaires, it signifies that the commercial properties the most suitable to build in the area are hotels, restaurants and shophouses.

Additionally, the financial analysis and maximum productivity reveal that the alternative mixed-use of hotels with 3,645 m², and shophouses with 8,910 m² produces an NPV value of IDR 187,637,261,135 and a land value of IDR 120,932,881,135. This equals to an increase of 39.11% higher than its original value.

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