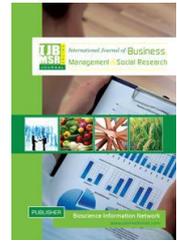


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Asset optimization of baranangsiang terminal commercial area using highest and best use analysis: a case study of Bogor city government's asset

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ABSTRACT

The main problem in Bogor city government's financial report is non-compliance against the provisions of the asset management legislation. The idle assets will only become a burden for government if it's not optimized, because it needs maintenance costs. Those assets have potential to be optimized in order to give revenue to government. This study aims to determine the best option of Bogor city government's asset in the form of land in baranangsiang terminal area using Highest and Best Use (HBU) Analysis. The result of this research shows that the best alternative to be built in baranangsiang terminal commercial area is shopping center.

Keywords: Asset optimization, Highest and best use analysis, Case study and Bogor city

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I. Introduction

In carrying out the mandate of Act Number 23 of 2014 on local government, the local government is given the authority to work independently to improve the welfare of their respective regions through utilization and management of resources in order to establish good governance. Local governments carried out accountability to society over the governance as represented in the financial statements are audited by The Audit Board of Indonesia (BPK).

The result of the audit report to financial statements of the Bogor city government years 2011 up to 2015 issued by BPK showed that there is lack of improvement over opinion of the financial statements of Bogor city government. In the notes of BPK audit report of the year 2016 stated that the main problem in Bogor city government's financial report is non-compliance against the provisions of the asset management legislation.

Many of Bogor city government's assets in the form of empty lands are idle and even abandoned. The idle assets will only become a burden for government if it is not optimized, because it need maintenance

costs. Those assets should be potential to be optimize in order to provide revenue to the government. The contribution of local revenue is only 2% from the whole local revenue target indicates that the asset management of Bogor city government is not optimal. There is a potential revenue that could be optimized from a good asset management, for instance, with the utilization of assets that could contribute to the Bogor city government in the form of return on assets of the revenue that comes from the utilization in the form of rent and capital gains from rising asset values every year.

Among the land belongs to Bogor city government which is not yet optimized, one of it is a 21,415 m² located at Baranangsiang, which up to this time most of the land was used as a bus station. Baranangsiang bus station is the main bus station in Bogor. According to law of Bogor city number 8 of 2011 on Bogor city spatial plan area 200-20131, Baranangsiang bus station classified in WP A zone, i.e. city's service center, while in pattern space plan map included trade and service area. The existence of the land in this convenient location, making the land has great potential for contribution to the local revenue. But until now, just as the terminal services is already running, the commercial function through trade and services had not gone well and not been able to give a good financial contribution to the government.

Bogor city government has declared their willingness in optimizing Baranangsiang terminal area through study of land optimization as stated by mayor of Bogor ([Tubasmedia 2014](#)), with the hope that the trade and service area optimization that will be done will not eliminate or minimize the main function of the terminal, but is expected to add value in order to maximize the potential of the terminal and terminal operations resulting in the maximum financial contribution to the government.

Asset optimization is an activity that must be undertaken by Bogor city government in order to optimize the local revenue. Therefore, researcher is interested to do the research about Bogor city government's asset optimization in the form of land in Baranangsiang terminal area using Highest and Best Use Analysis (HBUA) in order to get the highest and best option to utilize the land. HBU analysis itself is a method to get the best option which is suitable to be developed on land or vacant properties in terms of legal aspects, physical, financial, and productivity.

II. Literature review

Controlled and/or owned by the government as a result of past events and from which economic benefits and/or social in the future is expected to be acquired, either by the government or the community, and can be measured in the unit of money, including the resources required to finance the non provision of services for the public, and resources are preserved for reasons of history and culture. [Noorsyamsa \(2007\)](#), describes local government asset basically has two functions, i.e. service function and budgeter function. The service function is define as the assets used to meet the needs of the organization in accordance with the basic tasks and functions, whereas the budgeter function interpreted that assets can be a source of additional revenue through the form of rent, utilization cooperation, Build Operate Transfer (BOT), and Build Transfer Operate (BTO). Land is one form of asset that owned by the local government. According to [Hidayati et al. \(2003\)](#), value of land is influenced by physical characteristic such as, size and shape, topography, utilities, land development, location, and environment. Within the scope of the agrarian, land is part of the earth, called the earth's surface. The land in question here is not set the ground in all its aspects, but only set up one of its aspects, namely in the sense of juridical ground called rights. The land as part of the earth mentioned in article 4 paragraph (1) basic agrarian law, i.e. "on the basis of the rights of the master of the State as referred to in article 2 defined the existence of various rights to the surface of the Earth, called a ground, which can be granted to and belonged to by people, either alone or together with other persons as well as legal entities". The rights over the land mentioned in article 4 paragraph (1) as described in Pricipal Agrarian Law article 16 paragraph (1) BAL, i.e.:

1. Freehold Title;
2. Cultivation Rights Title (HGU);
3. Building Rights Title (HGB);
4. Right to Use Title;
5. Right to Rent Title;
6. Land Clearing Rights dan Forestry Rights; dan

7. Other Rights.

Asset management

Sugiama and Gima (2013) define that asset management is the science and art of wealth management to guide and covers the process of planning the asset needs, earn, inventory, conducting legal audits, assess, operate, maintain, renewed or abolished to divert assets in effectively and efficiently. Summerell in Harris et al. (2010) argues that organizations, both private and public, are now aware that the asset was instrumental in fiscal responsibility and carry out the mission of the organization. The effort of strengthening understanding in asset management are conducted to improve performance in all sectors, especially in financial management of government organizations. Summerell also believed that if asset management carried out optimally, it will allow the organization to make better decisions because of certain financial data disclosure in this case are served with a complete, can be verified and confirmed in financial statements.

Working stages of asset management

According to Siregar (2004), asset management comprised of five stages of the work. Stages of work asset management include: asset inventory, legal audit, asset valuation, asset optimization, and monitoring and control (through the development of SIMA). The five phases of this work are interconnected and integrated, as follows:

a. Asset inventory

Sugiama and Gima (2013) mention that asset inventory is a series of activities to perform logging, reporting the results of logging assets, intangible assets, and document them at any given time. Asset inventory is done to obtain data on all assets owned, controlled by an organization of companies or Government agencies. All assets need to be inventoried based on a load of own funds (investment), grants or from other means.

b. Legal audit

Sugiama and Gima (2013) explain legal audit as a series of examination (audit) to get a clear picture of the status of ownership, regarding the systems and procedures of mastery (usage and utilization), transfer of assets, to identify the occurrence of various legal issues, as well as finding a solution of the problem.

c. Asset valuation

Sugiama and Gima (2013) asset valuation is the process of describing the activities of appraisers in providing an estimate and opinion upon the economic value of a property, whether tangible assets or intangible assets, based on the results of the analysis against facts, which are objective and relevant to the use of fundamental valuation methods and principles.

d. Asset optimization

Asset optimization is a process of working in asset management with the aims to optimize the potential of assets both in terms of physical location, value, quantity/volume, legal and economic assets owned. Assets of local governments that untapped need to be optimized so as not to overload the financial area particularly in terms of the cost of maintenance and the possibility of aggravated trespass from third parties who are not responsible, as well as creating the source of local revenue (PAD). According to Siregar (2004), asset management optimization must maximize the availability of assets, maximize the use of assets and minimize the ownership costs. Optimization of assets can be done by Highest and Best Use Analysis. This can be done by minimizing or eliminating threats and obstacles over asset management so that the optimization of an asset that are not utilized can be done.

Local government asset would of course require an acceleration in the development of its infrastructure. In article 4 of President Regulation Number 67 Year 2005 stated that local government can include a private business entity in the implementation of infrastructure development.

According The National Council for Public-Private Partnerships (NCPPP), the forms of government and private cooperation are as follows:

- a. Build Operate Transfer (BOT) atau Build Transfer Operate (BTO);
- b. Buy Build Operate (BBO);

- c. Contract Services;
- d. Design Build (DB);
- e. Design Build Maintain (DBM);
- f. Design Build Operate (DBO);
- g. Concession;
- h. Enhanced Use Leasing (UEL);
- i. Lease Develop Operate (LDO) atau Build Develop Operate (BDO);
- j. Lease/Purchase;
- k. Sale/Leaseback; and
- l. Tax-Exempt Lease.

e. Asset monitoring and control

One of the effective way to increase the performance of the local government asset monitoring and control is with the development of SIMA (Asset Management Information Systems). Through the work of SIMA, asset management will be very secure without fearing of weak monitoring and control.

Valuation theory

In Indonesia Appraisers Standard (SPI) 2015 stated that valuation is a work process to give estimation and opinions over the economic value of an object at a particular time of valuation in accordance with the SPI and the applicable regulations. Based on SPI 2015, the property valuation process is as shown by [Table 01](#):

Table 01. Property Valuation Process

Scope of Assignment					
Problem Identification					
Identify Task Giver and Usage of Report	Define the Research Objectives	Define Basic Value	Identify Valuation Object and Ownership Rights	Valuation Date	Assumption and Limitation
Implementation					
Data Collection and Selection					
General Data of Area, City, and Environment		Specific Data of Valued Property		Supply and Demand Data, Comparing Data (Transaction, Demand, Rent Rates, Occupancy, Income)	
Data Analysis					
Market Analysis Supply and Demand Market Study			HBU Analysis Empty Land Developing Property		
Land Value Opinion					
Valuation Approach					
Market Approach		Income Approach		Cost Approach	
Indication of Value Reconciliation and Final Value Opinion					
Valuation Report					

In the valuation process there are three valuation approaches, market approach, income approach, and cost approach. All of these approaches is become the cornerstone of valuation process which is completed by method of each approaches.

a. Market approach

This approach produces a value indication by comparing the assets appraised with an identical or comparable assets, with a transaction price or offer information available. This needs to be done in terms of adjustments over the information transaction price or offer when there is a difference with the actual transaction, in accordance with the basic values and assumptions to be used in the assessment. Differences can also include the characteristics of the legal, economic or physical asset of which is valued.

b. Income approach

Income approach generates an indication of the value that is based on actual or estimated revenue income to be generated by assets during the period of benefits generated by the property owners.

c. Cost approach

Cost approach is suitable to value a new development or the construction of proposed development conforms with the highest and best use analysis of an empty land, and the land value to get an indication of the value of the property. An indication of the value of the property obtained from the indication of the value of the building and value of the land. An indication of the value of the building was obtained by estimating the present cost of new building then reduced by depreciation (Appraisal Institute 2013).

d. Highest and best use (HBU) analysis

In optimizing local government asset, valuation methods can be done with the analysis of the HBU and can be use as a recommendation and development strategy of optimization of assets belonging to local governments (Siregar 2004).

HBU is the use of the most likely and optimum of an asset, which is physically possible, have been considered adequately, legally permitted, financially worthy, and produces the highest value of the asset. Appraisers apply four criteria testing against land that have been built to follow the Indonesia Appraiser Code of Conduct (KEPI) and Indonesia Appraisers Standard (SPI) issued by the Public Profession of Appraisers Indonesia (MAPPI 2015), as follows:

- a. Legally Permitted,
 - b. Physically Possible,
 - c. Financially Worthy, and
 - d. Generate maximum productivity.
3. Problem Solving Framework

Bogor city government has problems in the field of asset optimization which there is a lot of maximally unutilized assets, so these assets do not have added value and has not contributed to the PAD, and one of these is Baranangisang Terminal commercial area. This problem raised the question on the best alternative development can be used to utilize the area in order to give added value and improve the financial contribution to PAD.

HBU analysis which based in four criteria is the best method to use in determine better options iin utilization of vacant land (Figure 01).

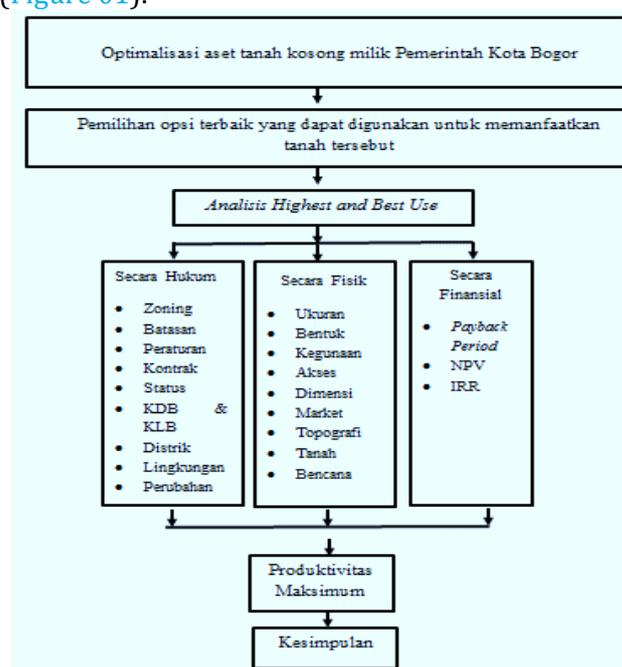


Figure 01. Problem solving framework.

III. Methodology

This research is on the types of property that can be an alternative asset development on the vacant land at Baranangsiang terminal area of Bogor city by using HBU analysis.

Operating variabels

In research involving HBU analysis, there is financial feasibility analysis of variables that need to be measured in a value as presented in Table 02 as follows:

Table 02. Operating variables

Variabel	Indikator	Ukuran	Skala
Keuangan	NPV adalah perhitungan seluruh proyeksi arus kas di masa depan yang diukur menjadi nilai sekarang	$NPV = \sum PV \text{ Cash flow} - \text{Initial Investment}$	Rasio
	IRR, adalah perhitungan tingkat pengembalian modal pada saat NPV = 0	$IRR = \sum_{t=1}^n \frac{CF_t}{(1 + IRR)^t} = C_{F0}$	
	Payback Period, merupakan perhitungan jangka waktu yang diperlukan untuk mengembalikan modal suatu investasi, yang dihitung dari arus kas bersih	$PP = \frac{\text{Initial investment}}{\text{Annual cash inflow}}$	

Sources and techniques of data collection

Types of data used in this study are:

- Primary data is the data obtained directly from the data source. To obtain primary data, researchers conduct interviews to employees of Finance And Asset Management Agency (BPKAD) of Bogor city, Planning and Development Agency (BAPPEDA) of Bogor city, and Operating Unit (UPTD) of Baranangsiang terminal with the purpose of obtaining additional information and data as needed. While the observation activities undertaken are passive participation observation. In this case the researchers come to the place were observed but were not involved in all its activities.
- Secondary data is the source document retrieved from literature, books, and materials related to the proposed research.

Sampling methods

In determining the types of properties, data collection using survey with questionnaire rating grid deployment of 30 respondents were conducted. Sampling was done using a purposive sampling technique where sampling is based on respondents with regard to the activities and operation of the Terminal Area, including the Baranangsiang employees Finance And Asset Management Agency (BPKAD) of Bogor City, Planning and Development Agency (BAPPEDA) of Bogor City, Operating Unit (UPTD) of Baranangsiang terminal, and the public who use the terminal Baranangsiang. The questionnaire was created using scale as a guide to provide a rating on each property specified alternative.

Research design and problem solving analysis

Research design used in HBU analysis are as follow:

- Productivity analysis
In this case, the productivity analysis is used to analyze the legal and physical aspects.
- Market analysis

Market analysis was used to see the market opportunities, whether there has been a balance between supply with demand to support the results of the HBU analysis.

At this stage, the valuation was carried out by several types of approaches as follows:

- a. Land value estimation as initial investment obtained using the market approach.
- b. Building value estimation as initial investment obtained using the cost approach.
- c. In analyzing financial feasibility aspect, income approach was used to know the capability of generating revenue and returns. Having obtained the results of the calculation, it will be measured by comparing the alternative between using a measuring instrument of finance i.e. ratio of NPV, IRR, and Payback Period.

IV. Result and Discussion

Legally permitted analysis

Baranangsiang terminal is a Bogor city government-owned asset based on the certificate of Management Rights (HPL) number 57 Year 2014. In asset optimization of Baranangsiang terminal, utilization pattern of Build Operate Transfer (BOT) through a cooperation agreement between the Bogor city government and PT. Pancakarya Grahatama Indonesia (PT. PGI) and treaty number 601/Perj. 418-BPKAD/2012, which followed by the awarding of the building rights title (Hak Guna building) with the intent and purpose to develop the Baranangsiang terminal area into the area that combines the function of a terminal and services integrated with commercial functions in order to be more adequate and useful. During the operation period of the agreement, PT. PGI has been carrying out its obligations in the development of the following terminal facilities and infrastructure and has operated until now. However, in the area of trade development efforts and services (commercial area) have not been realized up to this point. This is due to the constraints of the design and social problems. Upon site plan of PT. PGI and researcher's judgement, alternative commercial area for development project consisting of apartments, office buildings, shopping centers, and hotels. Baranangsiang terminal optimization stated in Law of Bogor city number 8 of 2011 on Bogor city spatial plan area 2011-2031, Baranangsiang bus station classified in WP A zone (i.e. city's service center), while pattern space plan map included in the trade and service area. Therefore, the commercial building is the right project alternative to be developed, while the apartments are residential buildings, making it less precise for alternative development. On the other hand, the law also stated in chapter 49, that high density housing with that form of vertical construction directed to be developed in most WP C in Sukaresmi and in most WP D in Kedunghalang village, Ciparigi Cibuluh village and Ciluar village. Thus, based on the licensing law, alternative development into apartments are not worth to be developed. So, at this legally permitted analysis, the central office buildings, malls and shopping centers can be an alternative development. In land development plan, it is important to note some related provisions of the basic layout of the building according to Law of Bogor city number 8 of 2011 on Bogor city spatial plan area 2011-2031. The provisions contained in the building layout of [Table 03](#) as below.

Physically possible analysis

Research subject (Baranangsiang terminal) astronomically located in 6 ° 36 ' 15 "S and 106 ° 48 ' 21" E, administratively located in Jalan Raya Pajajaran No. 9 Baranangsiang, Bogor timur district, Bogor City, Jawa Barat province, 16143 (postal code). Baranangsiang terminal has an area of 21,415 m² and generally square-shaped extending from north to south of the city of Bogor. The character of ground is relatively wavy with various tilt variation. According to the land slope classification in the decision letter of agriculture minister number 837/Kpts/Um/11/1980, Baranangsiang terminals most have a flat belonging to the wavy slope, apply range between 0–8% (Class I) dan 8–15% (Class II). The highest point of land is located on the southeast side near the terminal entrance with height reached 303 mdpl with relatively flat topography. This is the area that will be performed upon the valuation of alternate optimization. The location of the land which is at the center of the city make this terminal very strategic location and easy to reach and has good accessibility.

Soil type in the Terminal area Baranangsiang is latosol reddish-brown. According to [Soepardi \(1983\)](#), the latosol soil has good productivity and relatively more fertile than other types of land in Indonesia because of its granular can absorb water very well. Supported with a drainage system at the Baranangsiang terminal that has been running with either type of open and closed drainage channels

made the land relatively safe from flooding. The condition is relatively possible for Terminal Baranangsiang to be built for almost all types of construction. Based on that physical analysis, it can be concluded that the alternative development that possible to be built are office buildings, shopping centers and hotels.

Table 03. The provisions of spatial and area plan of Bogor city, Indonesia

No.	Parameter	Ketentuan	Luas (m ²)	Keterangan
1	Site Area	21.415	21.415	Luas total area Terminal Baranangsiang
2	Koefisien Lantai Bangunan (KLB)	4	85.660	Luas lantai keseluruhan bangunan yang diperbolehkan untuk dibangun
3	Koefisien Dasar Bangunan (KDB)	75%	16.061,25	Batas maksimal luas lantai keseluruhan bangunan yang diperbolehkan untuk dibangun
4	SP/ME	20%	17.305,5	Area ekstra untuk Ruang Parkir dan Ruang terbuka yang bisa dikalkulasi sebagai KLB
5	Koefisien Tapak Basement (KTB)	75%	16.061,25	Batas maksimal luas tapak basemen yang diperbolehkan untuk dibangun
6	Koefisien Dasar Hijau (KDH)	15%	3.212,25	Luas seluruh ruang terbuka di luar bangunan yang diperuntukkan untuk penghijauan dan luas lahan/tanah yang dimiliki
7	Ketinggian Maksimal	Sesuai Kawasan Keselamatan Operasi Penerbangan (KKOP)		Wilayah ruang udara yang digunakan untuk kegiatan operasi penerbangan dalam rangka menjamin keselamatan penerbangan
		Peraturan Tidak Tertulis		Tidak Menghalangi view Gunung Salak dan Tugu Kujang
8	Ruang Parkir Maksimum	50%	42.830	

Productivity analysis

Productivity analysis was conducted to determine the use of the most allows upon the preference of the public. By using the threshold testing grid-rating, which is the standard analysis procedure used in the HBU analysis with the aim to test, eliminate, and get the best alternative based on the preference of the public. Data collection was done using the survey method by performing the deployment questionnaire rating grid to 30 respondents. From the test results, shopping centre and a Hotel is the most possible alternative options to be developed based on the preferences of the public near research location, with a total score of 27.,57 for Shopping Center and 28.07 for Hotel.

Market analysis

The Bogor city in the regional context, has a function as a buffer state capital city. The role and function of Bogor city affected by the potential and the ability to grow and development of Jakarta as a space of life and livelihood of citizens and its surroundings, directly or indirectly. Bogor city affected by the rapid development of the capital. Educational activities, tourism, trade and culture make the Bogor city continues to grow and develop into an area that is very interesting and become the center of a dynamic economic activity for its citizen. This is a strategic potential for development and economic growth, not only for the urban, but also for business people (investors). In General, the economic development of Bogor City can be seen from the rate of growth of the gross regional domestic product (GDP) which is dominated by trade, hotels and restaurants with contributions amounting to 22%, followed by the sectors of the processing industry of 18 %, so that the function of the flagship city of Bogor is directed at the trade and tourism sectors.

Shopping center supply and demand analysis

Bogor city as a tourist destination visited by tourists either domestic or foreigners. The number of tourist visits in the year 2012 as much as 1,848,157 surged reached 5,262,224 in the year 2016. The

trend of increasing number of tourists, being an enticing business opportunities for investors to provide a variety of other tours, one of which is a shopping tour. The shopping center has now become the primary choice for the citizens entertainment, became one of the destinations while vacationing to other cities, because every shopping centers in various cities have their own characteristics, so people can sense a different shopping experience.

The market share of the shopping center, is define as the effective purchasing power of the citizen to shopping center. Community life at the city of Bogor, are very closely related to the demands to meet physical needs (food, clothing, household needs) and mental (recreation).

According to Indonesia Central Board of Statistics (BPS), the resident of Bogor city at the end of the year 2017 recorded a number of 1,064,687, with the rate of population growth is around 2.38%. With the large population and projections, Bogor city has a potential market share for business shopping center. If viewed from the macro indicators, the economy of Bogor city shows growth increasing to 6.73% in 2016, with the regional gross domestic product (GDP) on the basis of the applicable rates, which reached Rp35,400,811,300,000. Good economic growth rates will affect the level of well-being of Bogor city citizens. One of the indicators used to measure it, is the household spending and the rate of consumption. The average expenditure per capita in Bogor has increased approximately 26.64% for food goods, and increased 68.75% for non food goods in the year 2015. Thus, shopping center development prospect becomes preferably possible. This is confirmed by the statement of the head of BPS, Suhariyanto, stated that there is a change in the pattern of citizens expenditure Bogor city lately. Primary consumption, which previously became the main expenditure, has now switched to the entertainment needs (leisure). The entertainment needs, include tourism, staying at hotels, shopping or enjoy a meal outside the home. In the area of Bogor city of 118.5 km², there are currently at least 11 modern shopping centers, seven traditional market, hundreds of shophouse, factory outlets and other shopping venues.

Hotel supply and demand analysis

The development of the hotel property in Bogor is not as massive as other capital buffer area, like Serpong and Bekasi. However, the existing potential has managed to lure investors to invest in Bogor and opening a broad field of work. Bogor hotel market is experiencing exponential growth. The city is enjoying the advantages of its proximity to Jakarta as a favorite destination for people to spend time for vacation or for professionals to conduct business activities, such as gatherings, meeting or outing. This is proven with new hotel buildings that has been in existence and in operation. According to the BPS (2017), there are about 53 hotels, 15 of which is star hotels, two guesthouses, and two youth hostels in Bogor. HVS (Hotel Valuations Software) data also mentioned the compound annual growth rate (CAGR) of hotels in Bogor are 40% over a period of six years, beginning 2011 to 2016. This indicates the selling points of Bogor continues to increase and encourage the growth of its economy.

In fact, the hotel business in Bogor is promising. This is shown by its quite high contribution to local revenue of Bogor, which is about 35%. Based on its phenomenon and rapid development, it can be predicted that the development of the hotel market in Bogor will be increased as well.

Financial feasibility analysis

Financial feasibility analysis, is an analysis to determine the feasibility of a property, to get the advantage/benefit from an investment property with income approach using the discount cash flow analysis tool (DCF).

The stages are carried out in the financial feasibility analysis in alternative development of shopping center and hotel, are as follows:

- a. Estimating value of shopping center's land and building as initial investment
Based on the comparative market data analysis, the market value of the land is Rp 358,682,828,400.
With the cost approach, using the cost of Technical building (BTB) MAPPI, yielding the building value of a shopping center amounting to Rp 514,241,071,875. The value of the property (investment) for the use of the shopping center can be calculated based on the sum of the land value and building value is Rp 872,923,900,275.

For hotel, the value of the building amounting is Rp 675,330,558,576, then the value of the property (investment) for the use of hotel facilities, amounting to Rp 1,034,013,386,976.

b. Estimating rental income

Table 04. Shopping center rental income assumptions

Jenis Penyewa	Luas Total (m ²)	Harga sewa/tahun	Service Charge/tahun	Pendapatan Potensial
Cinema	900	2.473.200.000	1.101.600.000	3.574.800.000
Anchor Tenant	12.600	29.786.400.000	15.422.400.000	45.208.800.000
Speciality Tenant	10.500	28.854.000.000	12.852.000.000	41.706.000.000
Retail Tenant	11.300	54.240.000.000	13.831.200.000	68.071.200.000
Small Shop / Foodcourt	4.000	21.984.000.000	4.896.000.000	26.880.000.000
Exhibition (per hari)	4.000	167.900.000.000	-	167.900.000.000
Total	43.300	305.237.600.000	48.103.200.000	353.340.800.000

Table 05. Room rates income assumptions

Room Type	Rates/Day
Superior Room	Rp 620.000
Deluxe Room	Rp 820.000
Suite Room	Rp 1.175.000
President Room	Rp 2.250.000

c. Estimating occupancy

Based on researcher's judgement, the basic calculation of the occupancy rate in the first year after construction is 50%, then increases in each year, until it reaches the maximum occupancy rate of 82%, on a year to six years is considered constant to last year of DCF calculations.

For hotel, the basis of calculation as in the first year after construction, is 59%, then increase every year until it reaches the maximum occupancy rate of 88% in year 12, and is considered a constant up to the last year of DCF calculation.

d. Estimating room rates growth

Each year, revenues grew by 11%, according to the data of the Property Market Report Quarter 2017 by [Colliers International](#). For hotel, according to researcher judgement, the growth in room rates in the first year after the construction was 4.5% plus 1.5%, until a maximum of 6%, and considered to be constant until the last year of the calculation of the DCF.

e. Estimating costs

For the calculation of costs at the shopping center, its refer to the size of the valuation. These costs are presented in the form of quantitatively percentage referring to research done Rushmore (in m. Ade, 2014) as follows:

Table 06. Shopping center costs percentage assumptions

Keterangan	Persentase	Faktor Pengali
Biaya Variabel		
Parkir dan Keamanan	80%	Pendapatan Parkir
Operasional Lain-lain	85%	Pendapatan oper lainnya
Biaya Tetap		
Umum dan Administrasi	12%	Pendapatan Sewa dan Service Charge
Pemasaran	6,4%	Pendapatan Sewa dan Service Charge
Operasional dan Pemeliharaan	6,5%	Pendapatan Sewa dan Service Charge
Utilitas	4%	Pendapatan Sewa dan Service Charge
Perlengkapan Sewa	0,5%	Pendapatan Sewa dan Service Charge
Biaya Asuransi	1,4%	Pendapatan Sewa dan Service Charge
Penggantian	0,3%	Pendapatan Sewa dan Service Charge

Table 07. Shopping center costs percentage assumptions

Keterangan	Persentase	Faktor Pengali
Kamar	26%	Pendapatan sewa kamar
Food and Beverages	80%	Pendapatan Food & Beverages
Departemen lainnya	65%	Pendapatan Depart. Lainnya
Operasional lain-lain	85%	Pendapatan Opr. lain-lain
Umum dan Administrasi	10%	Pendapatan kotor Efektif
Pemasaran	6,4%	Pendapatan kotor Efektif
Operasional & Pemeliharaan	6,5%	Pendapatan kotor Efektif
Utilitas	4%	Pendapatan kotor Efektif
Management Fee	3,5%	Pendapatan kotor Efektif
Biaya Asuransi	1,4%	Pendapatan kotor Efektif
Pajak	5%	Pendapatan kotor Efektif

f. Estimating discount rate (DR)

Based on current Indonesia's economy, estimated discount rate earned for shopping center is 11.23%, and 10.42% for Hotels.

g. Estimating cash flow

Based on DCF calculation, an indication of the property market value obtained of the shopping center is Rp 2,391,342,528,699.77 and Rp 1,448,067,213,396 .91 for the Hotel.

The results of the financial feasibility analysis of shopping center and hotel properties is as follows:

- Net Present Value (NPV) of Rp1,518,418,628,425 for Shopping Center and Rp414,053,826,391 for Hotel.
- Internal Rate of Return (IRR) of 18.37% for Shopping Center and 12.67% for Hotel.
- Payback Period (PP) is 12 years and 4 months for shopping Center and 18 years 10 months for Hotel.

Maximum productivity analysis

The calculation results of maximum productivity of alternative shopping center development increased Rp. 54,155,302/m² from the initial value. That means, the utilization of land for a shopping center, will deliver the productivity of the land amounted to 323%. For hotel, land value increased Rp. 2,585,617/m² from the initial value. That means, the utilization of land for hotels only provide land productivity by 15%.

Thus, after those two alternative uses of the property had gone through the stage of HBU analysis, it can be concluded that the most feasible and most optimal property to be developed on the site is shopping center.

V. Conclusion and Suggestion

Conclusion

- a. Based on legally permitted criteria, the researcher's initial judgment on the development alternatives of the site of apartments, office building, shopping center and hotel. However, the alternative development of the apartment becomes unfeasible based on spatial planning law of Bogor city 2011-2031.
- b. Based on physically possible criteria, by using productivity analysis and market analysis to see community interest, high-score development alternatives are as shopping center with total score of 27.57 and 28.07 for hotel and both physically feasible to be developed according to condition property market in the city of Bogor in terms of trade and tourism.
- c. Based on financial feasibility, comparisons of financial feasibility indicators against two alternative development are:
 - Based on the Net Present Value (NPV), both alternative property development equally produces positive NPV or $NPV > 0$, so both alternatives are considered financially feasible. However, the cash inflows state that the shopping center generates a higher cash flow than the hotel.
 - Based on the IRR value, both alternative have IRR value above the reference rate, so both investments can be declared feasible. However, the shopping center generates a higher IRR value than the hotel.
 - Based on the payback period, the alternative use of the shopping center results in a shorter payback period to recover its investment capital.
- d. Based on the criteria of maximum productivity capability. It can be concluded that the alternative development of commercial area based on HBU analysis to be developed in the location of research subjects is shopping center.

Suggestion

- a. The result of this research is very influenced by time, if the government of Bogor city in the future use the result of this research as a picture of investment value, it should be reassess because the value can change with time.
- b. Good asset management depends not only on proper planning, but more importantly, it requires a high commitment from the Bogor city government in an effort to improve the quality of service for the community.

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