

Estimation of Land and Building Asset Values Using Market and Cost Approaches in Baubau City

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ABSTRACT

The community and construction service providers in Baubau City face the problem of problematic work locations, relatively high land prices, a supply chain system that is considered less than ideal, fluctuating construction material price stability, mountainous, undulating and hilly land conditions, and limited availability of supporting work resources, which greatly affect the overall value of building assets. The purpose of this study is to analyze the value of land assets and residential buildings type 60/90 (specification of land area 90 M2 and house building area 60 M2) at present and in the coming years, using the market data approach and cost approach methods . Based on the results of the study , it is concluded that : 1) The current value of land assets and house buildings type 60/90 in 2025 is Rp. 325,306,515. 2) The value of house building assets type 60/90 in 2035 or 10 years from now is Rp. 585,551,640.

Keywords: Estimation, Land and Building, Asset Values, Market and Cost Approaches

1. Introduction

The One Million Homes Program (PSR) is a concrete manifestation of the government's presence to provide decent and affordable housing for people throughout Indonesia. In its implementation, the government also continues to encourage collaboration and synergy from various partners in the housing sector such as ministries/institutions, local governments, banking, the private sector and the community until 2023 amounting to 9,206,379 units throughout Indonesia (Ministry of PUPR, 2024). The growing demand for housing has encouraged developers to build housing in various regions, offering a wide range of housing specifications at specific price points. If the supply of housing doesn't match demand, it will drive up prices over time. Property prices can be influenced by several variables, such as location, building type, construction material prices, and others. Property market stability can be seen from market absorption capacity, increasing occupancy rates, and controlled property and house prices, which vary and tend to rise.

People no longer view housing demand solely as a means of fulfilling basic needs, but rather as an attractive investment (Widodo et al., 2012). The advantages of this investment can be divided into two categories: financial and non-financial. Financial advantages include the tendency for land value to increase, which can be used for capital gains, the potential for revenue from operations in the form of rent, good collateral for credit, and a safe long-term investment. Non-financial advantages include the prestige and pride it brings to the owner. However, there are also disadvantages, such as low liquidity, the potential for depreciation, and damage or destruction in the event of a disaster.

Property, such as land, is influenced by factors that motivate human activity. These factors include social factors, reflected in population characteristics, including population size, family size, education level, crime rate, and so on. These factors shape land use patterns in a region, while economic factors are reflected in the relationship between supply and demand and a community's economic

capacity to meet needs (Fahirah, 2011). Valuation is a combination of science and art to estimate the value of an interest in a property for a specific purpose and at a specified time, taking into account all the characteristics of the property. In other words, an appraisal is an estimate and opinion of the value of an asset or wealth by an appraiser based on the interpretation of factors and beliefs at a specific time or date (Rijasa et al., 2014). Valuation or appraisal is a service sector that can play a significant role in determining the economic value of assets and their potential wealth. Value estimates should be realistic and marketable indications at a specific time. This type of value estimation is referred to as market value, which over the years has become a strong agreement that has been formed among experts, clients, governments, and the legal system that market value assessments must be based on real market data for the results to be accepted (Mustika, 2017).

Demand variations include the number of workers, wage rates, income levels, purchasing power, interest rates, and transaction costs. Supply variables include the amount of land available, permit fees, taxes, and other overhead costs. Government factors, government policies, both political and legal, will affect land values, for example, security facilities, health, education, transportation networks, tax regulations, and others. Environmental factors affect land values, including internal conditions, namely location, size, topography, soil type, dimensions. External conditions include the environmental conditions around the location such as the presence of seas or ports, rivers, mountains, and transportation networks that affect ease or accessibility to the land location (Anastasia, 2017).

Geographically, Baubau City is located in the south of Southeast Sulawesi Province with coordinates between 5.21°-5.33° South Latitude and 122.30°-122.47° East Longitude. Based on its geographical location, Baubau City borders Buton Regency to the north, South Buton Regency to the south, Buton Regency to the east, and Buton Strait to the west. Baubau City has eight sub-districts, Sorawolio District is the largest sub-district with an area of 111.78 km² and Batupoaro District is the smallest sub-district with an area of 1.68 km². The topography of the land in Baubau City generally has a mountainous, undulating, and hilly surface with a land slope reaching 2° to 40° (BPS Sultra, 2022).

Housing is one of the primary needs which is also a determining factor in community welfare indicators. In 2023, approximately 76.34 percent of households were recorded as having their own building ownership status, while households with non-own ownership status were recorded at around 23.66 percent. The number of own building ownership status in 2023 increased by 4.18 percent compared to 2022 (Baubau City Statistics Office 2024). In general, the community and construction service providers in Baubau City face problems with problematic work locations, relatively high land prices, a supply chain system that is considered inadequate, fluctuating construction material price stability, mountainous, undulating and hilly land conditions, and limited availability of supporting work resources, which greatly affect the overall value of building assets. Based on the above data, this study will examine the value of property assets in the form of land and buildings in housing using the market data approach method for land asset value analysis and building asset value analysis using the cost approach method. Based on the description above, this study aims to: 1) Analyze the current value of land and building assets for type 60 houses in 2025 and 2) Analyze the value of land and building assets for type 60 houses in 2035 or 10 years to come.

According to Doli, S. (in Afandi, 2018) states that the general definition of assets is "Goods (thing) or something (anything) that has economic value (economic value) or exchange value (exchange value) owned by a business entity, agency or individual (individual). Based on Government Regulation of the Republic of Indonesia Number 24 of 2005 concerning Government Accounting Standards

(PSAP) Statement No. 7 states that: "Assets 15 are economic resources controlled and/or owned by the government as a result of past events and from which future economic and/or social benefits are expected to be obtained, both by the government and the community, and can be measured in monetary units, including non-financial resources needed to provide services to the general public and resources maintained for historical and cultural reasons. According to Hailuddin (2020) assets are tangible or intangible assets that have economic, commercial and exchange value owned by individuals or agencies to help achieve goals.

According to Financial Accounting Standards (PSAK) No. 16 of 2011, assets are all wealth/properties owned by a person or company, both tangible and intangible, valuable or valuable, which will provide benefits in the future for each person or company. Meanwhile, according to Hidayat (2011), assets are goods which in the legal sense are called objects, which consist of movable and immovable objects, both tangible and intangible, which are contained in the assets or assets of an agency, organization, and business entity. According to another opinion (Sugiama, 2013:15) states that assets from an economic perspective are goods (thing) or something (anything) that has economic value (economic value) commercial value (commercial) or exchange value (exchange value) which is in a business entity, agency or individual (individual).

Building assets according to the Regulation of the Minister of Public Works No. 45/PRT/M/2007 are the physical form of the results of construction work that is integrated with its location and position, partly or wholly located above and/or in land and/or water, which functions as a place for humans to carry out activities, both for housing or residence, religious activities, business activities, social activities, culture, and special activities. Land assets are ownership of land which is indicated by evidence that there has been a transfer of ownership rights and/or legal control such as a land certificate.

Several previous studies have examined the valuation of land and building assets from various perspectives. Research by Aprianto Arja (2021) showed that the assessment of housing assets in BTN Villa Indah Pondui Kolaka based on user perception obtained a good category with an average score of 3.73. Meanwhile, research by Dian Ayu Rahmadani et al. (2022) in Kertha Raharja Housing, Denpasar, valued residential property at IDR 813.4 million, calculated using both the cost and market approaches. Furthermore, Moch. Yakob Hidayat & Ferry Irawan (2021) emphasized that land and building valuation for tax purposes is based on SE-54/PJ/2016, which applies market value or other values in accordance with tax regulations.

Other studies focused on institutional asset estimation and consumer decision-making factors. Adyvicturna Tinambunan et al. (2018) estimated the land and building assets of Diponegoro University at a total value of IDR 7.25 trillion, while Nisa Marisa examined factors influencing consumer purchasing decisions in Mustika Plamongan Elok Housing, such as advertising, word of mouth, and environmental conduciveness. Erni Widiastuti and SWE Handayani (2012) further highlighted that location, income, house price, and public facilities significantly affect the decision to purchase subsidized housing.

Several other studies also addressed investment and aesthetic aspects. IBG Indramanik et al. (2018) and Fadjar Purnomo (2017) assessed the feasibility of housing investment based on IRR, NPV, and BCR, concluding that property investment is both feasible and profitable. Sutomo and Dini (2020) and Rizki (2016) examined building asset valuation from the perspective of aesthetics and compliance with Indonesian Valuation Standards, while Rijasa et al. (2014) emphasized the importance of location, environment, and physical characteristics

in determining residential property values in Denpasar. Overall, these studies demonstrate that the valuation of land and building assets can be analyzed from user perception, formal valuation methods, investment perspectives, and environmental factors.

2. Methods

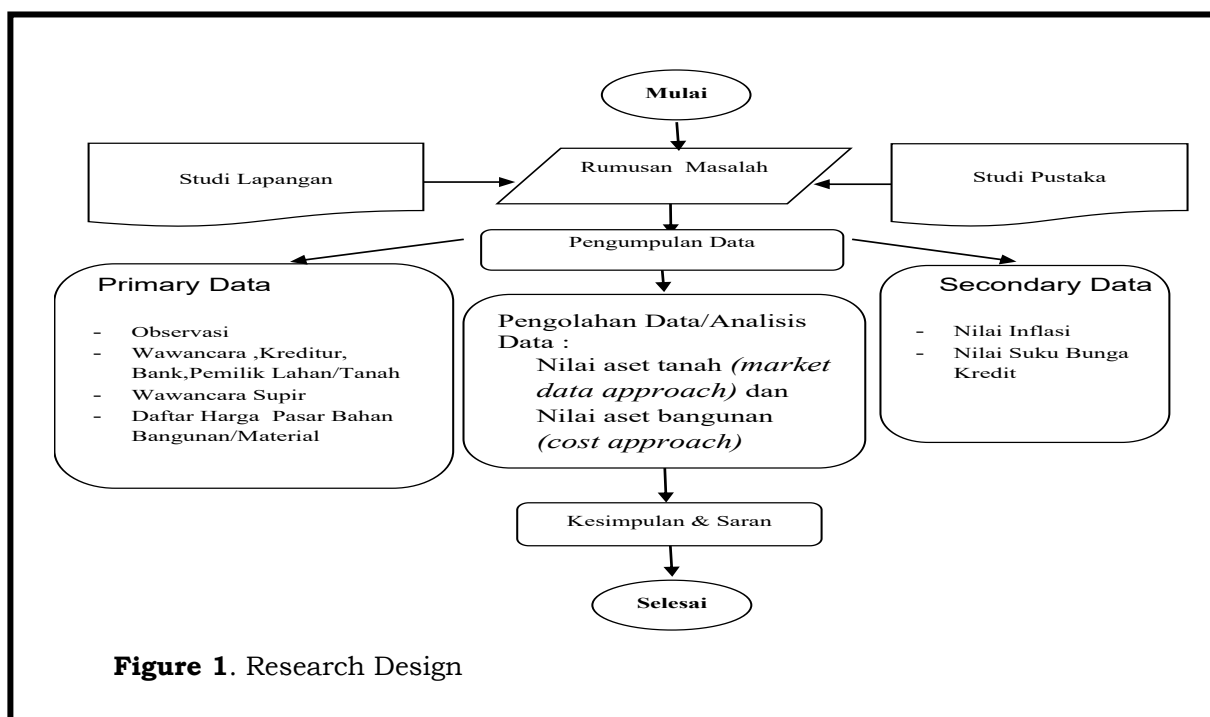
This research was conducted using a case study method, collecting primary and secondary data. Primary data was collected through interviews and observations with the parties involved. Secondary data was collected through literature review of books, research journals, print media, and the internet. The data analysis technique in this study uses quantitative methods, The method used is a market data approach to calculate the value of land assets, comparing land prices around the research object by interviewing several landowners. The value of building assets is calculated using a cost approach by analyzing building construction costs using the 2019 Indonesian National Standard, which is then accumulated with the IMB/PBG costs and consultant/design costs.

$$\text{Asset Value} = \text{Land Price Value} + \text{Building Asset Value}$$

The stages of data analysis are as follows :

1. The first stage is collecting primary and secondary data which includes a list of land/plot prices, designs, cost estimates, permits, a list of material prices, inflation rates and bank loan interest rates.
2. The second stage is calculating the cost of ownership which consists of purchasing land/plot, construction costs, permits (PBG/IMB), consultant fees (design or drawing fees).
3. The third stage calculates the loan costs and bank interest assuming a period of 10 years (120 months).
4. fourth stage is to calculate the current and future value of land and building assets, assuming a 10-year period.

In general, the stages and procedures in this research are described in a scheme in the form of a flow chart below :



3. Findings and Discussions

3.1 Land Value Analysis

Based on the results of field observations and interviews conducted with several landowners around the Muhammadiyah University of Buton campus area, it was found that the majority of them possess legal Freehold Certificates (SHM) for their land. One of the land plots assessed in this study has an area of 90 m², with dimensions of 15 meters by 6 meters. The reported purchase price for the land is IDR 500,000 per square meter. Using this information, the calculation of land value can be derived as follows: Land Value = Land Area × Land Price per Square Meter = 90 m² × IDR 500,000 = IDR 45,000,000. This figure represents the market-based estimation of the land asset value at the time of data collection. The physical characteristics of the land further strengthen its economic potential. Observations indicate that the soil and land conditions are relatively stable, with a contour or slope that is fairly flat, making it suitable for various types of development. Additionally, the location is considered quite strategic due to its proximity to the Muhammadiyah University of Buton, which enhances accessibility and the potential for future demand. These factors collectively contribute to the attractiveness of the land as an investment asset, providing not only legal security through ownership certificates but also long-term value in terms of utility and potential appreciation.

3.2 Land Value Analysis

The analysis of building asset value is reviewed from a technical perspective, including construction costs, building permit (IMB/PBG) costs, and design costs. The specifications for a type 60 house are as follows:

Table 1. Building Value Analysis

Building Area	60 M2 (10 mx 6 m)
Drawing/Design Fee	2% x Actual Cost = Rp. 269,525,788.57 x 0.02 = Rp. 5,390,515
Credit Term	10 Years (120 Months)
Bank interest rate	8% per year
Number of Bedrooms	3 Units
Number of KM/WC	2 Units
Electricity	1300 Watts
Water	PDAM

Table 2. Summary of construction costs for a type 60 house

No	Job description	Type 60 House
		Total Unit Price (RP)
1	Preparatory work	2,250,000.00
2	Foundation Work	13,427,242.50
3	Concrete Work	40,163,402.56
4	Lightweight Brick Wall and Plastering Work	60,519,762.77
5	Wooden & Aluminum Door/Window Frame Work	26,074,715.36
6	Ceramic Floor and Wall Installation Work	31,067,287.28
7	Ceiling Installation Work	16,022,295.08
8	Painting Job	3,359,770.51
9	Electrical Installation Work	6,565,000.00
10	Sanitary Work	20,915,127.50

11	Roofing, Fencing, Canopy and Finishing Work	49,161,185.04
	Real Cost	269,525,788.57
	PBG/IMB	5,390,515.77
	Construction Costs (Rounded)	274,916,000.00

The value of the building assets of a type 60 house is = construction costs + design costs = Rp. 274,916,000 ,- + Rp. .. 5,390,515 = Rp. 280,306,515,-. From the analysis above, the current value of the land and building assets of a type 60 house in 2025 is Rp. 325,306,515,-. The value of the bank credit installments every month for 10 years (120 months) from 2025 to 2035 is = Principal cost of monthly installments + bank interest of 8% per year (0.0067 % per month) x principal cost of monthly installments = Rp. 325,306,515,- / 120 + Rp. 8% x Rp. 325,306,515,- / 12 = Rp. 2,710,887,- + Rp. 2,168,710,- = Rp.4,879,597,-, then the total monthly bank installment fee for 120 months or 10 years is Rp.4,879,597,-

3.3 Land and Building Asset Value in 2035

The projection of land and building asset values in 2035, or ten years from the baseline year of 2025, amounts to IDR 585,551,640. This calculation is obtained from the monthly value of IDR 4,879,597 multiplied by 120 months. The results of the analysis demonstrate a significant increase in property value when compared to the 2025 valuation. Specifically, the appreciation rate reaches 55.60% over the ten-year period, equivalent to an average monthly growth of 0.463%. This finding highlights the long-term investment potential of property assets, particularly in strategic urban areas, as they continue to show consistent and sustainable growth.

4. Conclusion

Based on the results of data analysis and discussion, several important conclusions can be drawn. First, the current valuation of land and building assets for a type 60/90 house in 2025 reaches IDR 325,306,515. This figure reflects the present market condition, taking into account various economic factors such as land prices, construction costs, and market demand. The value serves as a baseline for stakeholders, including property owners, investors, and policymakers, in understanding the current worth of residential property assets. Second, projections for the next ten years, namely in 2035, show that the value of land and building assets for the same type of house will increase significantly to IDR 585,551,640. This indicates an appreciation of nearly double compared to the current valuation. The growth highlights the long-term potential of property investment, particularly in the residential sector, where land scarcity and rising demand continue to drive asset values upward. Overall, the findings suggest that property assets, especially houses of type 60/90, hold strong potential for wealth accumulation over time. This conclusion also emphasizes the importance of strategic investment decisions in property, as it demonstrates resilience against inflation and market fluctuations, making it a reliable instrument for financial growth and stability in the future.

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