PT X HOUSING PROJECT FEASIBILTY ANALYSIS

IN BANDUNG UTARA

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ABSTRACT

Housing is a primary basic need for everyone in order to satisfy the need for a place to live. The demand for housing keeps increasing following the growth in citizens population. Housing shortages in Indonesia reached eleven million unit according to the data from Indonesia Real Estate. To meet the demand of housing for citizens, the government has introduced housing programme with Down Payment 0% package and one million house programmes. An active role of private firms especially in Bandung is important to satisfy housing demand for citizens. This matter can be seen from the large numbers of growing developer. However, the development need to be analyse regarding its qualification before the project is carried out.

The purpose of this research is to analyse whether the project X that was planned to be built by the developer is economically eligible. This research of feasibility used Net Present Value (NPV), Internal Rate Return (IRR), Payback Period (PP), Profitability Index (PI) and Cash Flow analysis methods.

Based on the analysis result it can be concluded that according to financial aspect the project X is economically qualified to conduct.

Keywords: Feasibility research, housing, NPV, IRR, PP, PI, Cash Flow.

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I. Introduction

In this era, other than becoming a shelter homes also built as a long-term investment. This happened because prices of real estate are tending to increase every year. For most people that are from middle to upper class, they made housing as a long-term investment. Where in case if one day they need money, their house can be sold at a higher price. The demand for fulfillment of housing for the community every year continues to increase, so this research will focus on housing development projects from the Case Study by PT. X who planning to build housing area located in North Bandung.[3,4,6]

II. Basic Theory

2.1.. NPV Method (Net Present Value)

The analysis of investment also requires a consideration of time value of money. In others words, instead of simply calculating the profits of investment, we must calculate the investment's net present value. The NPV (Net Present Value), Is the difference between the present value of the cash inflow and the cash outflows. As such, the NPV estimates the amount of wealth that the project creates. [2,3,4,5,6]

The NPV of an investment proposal can be defined as follows:

$$NPV = CF_0 + \sum_{t=1}^{n} \frac{CF_t}{(1 + k)^t}$$

Where:
NPV = Net present value
CFo = Capital in early of period investment
CFt = Cash inflow during year-1 till year-n
K = Cost of capital in year-1 till year-n
t = time of investment

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The NPV criterion simply states that investment projects should be accepted if the NPV of the project is positive and should be rejected if the NPV negative.

NPV > 0, indicated the project accepted

NPV < 0, indicated the project rejected

2.2.. Method of IRR (Internal Rate of Return)

Internal rate of return(IRR) of an investment is analogous to the yield of maturity (YTM) on bond. Specifically, the IRR is the discount rate the result in a zero NPV for the project. For investments that offer more than one year of expected cash flow, the calculation is a bit more tedious. Mathematically, we solve for IRR for multiple-period investment by solving for IRR, which is the unknown discount rate in the following equation, which makes the present values of investment cash flows equal to zero. In others words, using the IRR as the discount rate would make the NPV equal to zero, that is, [3,4,5,6]

$$ NPV = CF_0 + \sum_{t=1}^{n} \frac{CFt}{(1 + IRR)^t} $$

IRR = Discount rate makes the NPV equal to zero

CFo = Capital in early of period investment

CFt = Cash inflow during year-1 till year-n

t = time of investment

2.3. Profitability Index.

Sometimes referred to as the cost-benefit ratio, the *Profitability Index (PI)* is relative valuation measure. The profitability index, is a cost-benefit ratio equal to the present value of investment's future cash flows divided by its initial cost, Firms with easy access to capital prefer the NPV criterion, because it measures the amount of wealth created by

investment. However, if the firm's management is faced with a capital –rationing situation and cannot undertake all of its positive-NPV investments, the PI offers a useful way to rank order investment opportunities to determine which ones to accept,

PI decision criteria, when the PI is greater than 1. the NPV will be positive, so the project should be accepted. When the PI is less than 1, the project should be rejected. Formula of PI [3,4,5]:

$$P\,I = \frac{\frac{CF_1}{(1+k)^{t=1}} + \frac{CF_2}{(1+k)^{t=2}}}{CF_0}$$

PI > 1, project accepted
PI < 1, project rejected

2.4.. Payback Period (PP)

The payback period for an investment is the number of year needed to recover the initial cash outlay required to make the investment. The payback period criterion measure how quickly the project will return its original investment, which is a very useful piece of information to know when evaluating a risky investment. However, using the payback period as the sole criterion for evaluating whether to undertake an investment has three fundamental limitations.

The Payback formula that is [3,9]:

$$\text{Payback Period} = \frac{\text{Cost}}{\text{Uniform annual benefit}}$$

III. Methodology Research and Discussion

3.1. Research Methodology

The research design used in this proposal is to see the feasibility of the housing development project by PT X, using the financial ratio criteria and how the business plan will be implemented so that the project can provide maximum contribution to the stake holders.

To obtain data and information obtained in this study, the authors use data collection techniques through:

1) Observation, direct observation of housing project location

2) Interview, conduct interviews with prospective contractors who will become business partners

3) Questionnaire, especially regarding building materials from material stores.

3.2. Housing Development Concept

The housing development project by PT X Developer located in North Bandung where the project location is very strategic close to the City Center, Public Facilities, Social Facilities and Education facilities ranging from kindergarten, elementary school, junior high school, high school and tertiary institutions and also important housing development locations close to tourist sites.

The area of land that will be built is $\pm$ 0.3 Ha with the title certificate. The housing that will be built consists of 20 units with a type of building type 80 (minimalist) with a land area ranging from 100 m2 to 150 m2, of course already included with the infrastructure for the formulation of modern cluster models.

3.3. Financial Aspect Analysis

In conducting project analysis, the financial aspects that will be analyzed in this study

are:

3.3.1. Identification of the investment cost

Table 1. Cost of Investment

No	Uraian	Harga Sat	Total
1	**Pembebasan Tanah**	2,000,000	**5,904,000,000**
2	**Perijianan**		**118,080,000**
	pengukuran	15,000	44,280,000
	KRK(ijin lokasi), Site Plan, IMB Induk	25,000	73,800,000
3	**Administrasi Akad**		**780,000,000**
	Biaya Apraisal	1,500,000	30,000,000
	Biaya Notaris	1,500,000	30,000,000
	Biaya Akad	1,500,000	30,000,000
	BPHTB 5%	30,000,000	600,000,000
	Sertifkat Spilizing	3,000,000	60,000,000
	IMB Zplitsing	1,500,000	30,000,000
4	**Prasaran Umum**		**538,120,000**
	Pekerjaan Tanah	10,000	29,520,000
	Pekerjaan Drainase	1,000,000	100,000,000
	Pekerjaan Instalasi Air	3,500,000	70,000,000
	Pekerjaan Jalan	300,000	206,100,000
	Pekerjaan Jaringan Listrik	2,000,000	40,000,000
	Pekerjaan Jalan Masuk (Gapura)	50,000,000	50,000,000
	Benteng Keliling	150,000	22,500,000
	Pekerjaan Taman	200,000	20,000,000
5	**Pembangunan Rumah** Type 86/105	4,000,000	**6,880,000,000**
6	`Biaya Operasional	22,190,000,000	**443,800,000**
7	Biaya Marketing	22,190,000,000	**665,700,000**
8	Total Penjualan Type 86/103 sd 86/153	1,109,500,000	**22,190,000,000**

3.3.2. Cash flow

Table 2. Cash Flow

No	Uraian	2018	2019	2020
1	**PEMASUKAN**			
	Saldo		(4,122,613,495)	(431,195,178)
	Modal Kerja	2,545,700,000		
	Kredit BANK			
	Pembebasan Tanah	5,904,000,000		
	Konstruksi	4,085,000,000	2,795,000,000	
	Uang Muka dari konsumen 30%	-	2,327,819,817	4,329,180,183
	Pelunasan KPR dari BANK 70%			
	Type 86/103 sd 86/153	-	8,543,150,000	6,989,850,000
				-
	Total Pemasukan	12,534,700,000	9,543,356,322	10,887,835,005
2	**PENGELUARAN**			
	Pengeluaran Langsung			
	Pembebasan Tanah	5,564,857,834	339,142,166	-
	Perijianan	5,367,273	64,407,273	48,305,455
	pengukuran			
	KRK(ijin lokasi), Site Plan, IMB Induk			
	Provisi Kredit BANK 1%	127,840,000	-	-
	Biaya Untuk Konstruksi:	-	-	-
	Prasaran Umum	22,959,455	476,537,423	38,623,122
	Pekerjaan Tanah			
	Pekerjaan Drainase			
	Pekerjaan Instalasi Air			
	Pekerjaan Jalan			
	Pekerjaan Jaringan Listrik			
	Pekerjaan Jalan Masuk (Gapura)			
	Benteng Keliling			
	Pekerjaan Taman			
	Pembangunan Rumah			
	Type 86/105	-	3,931,428,571	2,948,571,429
		5,721,024,561	4,811,515,433	3,035,500,005
	Pengeluaran tidak Langsung			
	Administrasi Akad			
	Biaya Apraisal	435,263,933	344,736,067	
	Biaya Notaris			
	Biaya Akad			
	BPHTB 5%			
	Sertifkat Spilizing			
	IMB Zplitsing			
	Biaya Marketing	98,700,000	324,000,000	243,000,000
	Biaya assuransi	25,000,000	90,000,000	
	Biaya Operasional	110,950,000	190,200,000	142,650,000
	Pajak PPn 10%	277,375,000	1,109,500,000	832,125,000
	Pengembalian			
	Kredit BANK	9,989,000,000	2,795,000,000	
	Modal Kerja			2,545,700,000
	Pembayaran bunga kredit			
	Interest Net Working Capital			687,339,000
	Bunga BANK	840,960,000	309,600,000	
		10,936,288,933	5,163,036,067	4,450,814,000
	Total Pengeluaran	16,657,313,495	9,974,551,500	7,486,314,005
	S a l d o	(4,122,613,495)	(431,195,178)	3,401,521,000

Based on the cash flow analysis above, this project is expected to produce a positive cash flow of   Rp. 3,401,521,000, - at the end of the 3rd year so based on the results of the cash flow analysis this project is feasible to do.

3.3.3. Net Present Value (NPV),

Based on the results of the calculation of the NPV value of Rp. 1,648,969,341, - greater than zero (NPV> 0), then based on the calculation of the consideration of the NPV this project is considered feasible. This NPV prediction for the property sector illustrates that the property business is more promising than the food and beverage business where one of the studies conducted by Ali, W.S. and Soegoto, H.S. (2016) which produces NPV for only Rp. 159,264,682, - [1,7,8,10]

3.3.4. Internal Rate of Return (IRR),

The IRR for this project was 32.6%. This result is far better if we save money on a BANK in the form of a Deposit that only gives a return of 5%. [7,8,10]

3.3.5. Profitability Index (PI).

The value of PI calculation shows greater than one, indeed PI = 1.33 so that this housing project can be accepted. [1,2]

3.3.6. Payback Period (PP)

Table. 3.

$$\text{Payback Period} = \frac{\text{Cost}}{\text{Uniform annual benefit}}$$

Year	2018 T = 0	2019 T = 1	2020 T = 2
Net Cash Flow	(4,963,573,494.79)	3,691,418,316.65	3,832,716,178.14
Cash Flow	-	(1,272,155,178.14)	2,560,561,000.00

The minimum time required for return on investment is 1.33 years or for approximately 16 months, since 2019 it is estimated that the Payback Period will fall in April 2020 so that the time is higher if compared to the length of the project. If compared with the study of feasibility studies on Ali Bakri Cake and Drinks where PP is only 1 year 12 months relatively different, so the housing project is still feasible to be built. [1]

IV. Conclusion

Based on the results of financial analysis, which is seen from Income Statement Cash Flow, NPV, Profitability Index, Internal Rate of Return and Payback Period on housing development by Developer PT X in North Bandung, the project is feasible to be built., because:

1. The Profit and Loss Statement shows a profit of IDR 6,860,300,000. - obtained from the cost of the project against the selling price of the house offered

2. Cash Flow Analysis shows that the company earns a profit starting from the second year period, amounting to Rp3,691,418,317 and the end of the third year period is Rp. 3,832,716,178

3. Consideration of the value of project money against time by generating an NPV value greater than zero (NPV>0), namely the NPV of Rp 1,648,969,341,

4. The IRR calculation is equal to 32.6% greater than MARR which is around 10%

5. The payback period for investment is the number of years needed to recover the initial cash outlay needed to make an investment for this project, is 1.33 years or about 16 months since 2019.

6. The profitability index, is the profit-loss ratio equal to the present value of future investment cash flows divided by their initial costs, this project gets my P value = 1.33 greater than 0, so this project is worth considering to be built

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