

HOUSING PROVISIONS AND AFFORDABILITY IN PRIVATE RESIDENTIAL REAL ESTATES IN ADDIS ABABA

Selam Yohannes and Abebe Dinku
School of Civil and Environmental Engineering
Addis Ababa Institute of technology (AAiT), Ethiopia
Corresponding Author's E-mail: seleyoh@gmail.com

ABSTRACT

Based on the current rate of growth (3.02%), the population of Ethiopia is expected to double in the next 30 years and cross 210 million by 2060 implying a higher demand in housing needs. It is learnt from the trend of housing development in Addis Ababa that reducing the housing backlogs has been a challenge to the Ethiopian city administration. Following the change of government in 1991, the Addis Ababa City Administration has considered private real estate sector to be one of the actors in housing development.

In this article, housing provisions and affordability of private residential real estates in Addis Ababa are evaluated. The study includes: a brief overview of the affordability situation in residential real estates in selected countries, assessing the affordability of the private residential real estates in Addis Ababa and the standards of housing in relation to their costs are analyzed.

It is found from the study that the private residential real estates are unaffordable to the average income holders of Addis Ababa residents. In addition, the standards of the selected private residential real estates lack excellence which is not consistent with the prices of the housing units. It is further recommended that a relevant housing policy should be introduced that accommodates low/middle income residents.

Keywords: *affordability, housing developments, income and expenditure, real estate*

INTRODUCTION

According to the recent statistics, Addis Ababa, which is the capital city of Ethiopia, has a population of 4.6 million [1]. The dramatic increase in population implies a higher demand for housing which in turn

increases the need for residential real estate and infrastructural development in the City.

Lack of sufficient and affordable housing is one of the major problems in Addis Ababa as well as in other cities and towns across the country. Even though there is an increase in the supply of housing by both the government agencies and private real estate developers, there is still a huge gap between housing needs and supply in Addis Ababa. In 2002, the number of housing units available in Addis Ababa was about 60% of the total requirements and had a backlog of 230,000 housing units [2]. In 2015, the housing needs reached about 2,250,831 units, which equated to a demand of 225,000 new housings per annum [3].

Housing affordability compatible with different income level of the city residents has to be given sufficient attention. Based on the previous experiences, it is recognized that the prices of housing tend to increase as the demand for housing increases. For instance, in 2008, the cheapest private real estate houses for small residential household ranged from 1-3 million birr while 92% of Addis Ababa residents earned a monthly income of less than \$167 a month (3,340 Eth birr) [4]. Subsequently, in 2016, the cheapest price reached a range of 3-6 million birr making it unaffordable for the majority of Addis Ababa residents. This substantial increase

in trend is a major concern to many and has created a significant doubt over the affordability of housing for the vast portion of the population.

In this article, the focus is limited to private residential real estate developments regarding housing provisions and affordability situation in Addis Ababa. The affordability of housing is analyzed by using the data obtained from the Central Statistical Agency (CSA) that provides details of income and expenditure of Addis Ababa residents. Among the total of 125 registered real estate developers in Addis Ababa, seven private real estate developers were considered for the study.

LITERATURE REVIEW

Housing development in Addis Ababa

During the period between 1975-93, housing provisions in Addis Ababa were mainly restricted to: private real estates, central government effort and kebele low cost houses, co-operatives, individual/private housing, international NGOs (upgrading and minor redevelopment works), informal/squatter settlers (chereka bet), pavement dwellers and sites and services which are briefly discussed as follows [5].

Private developers (Real estates): The private sector involvement had been restricted during the period between 1974 – 1991. This was mainly due to the socialist ideology of the government that was dictated by the 1974 proclamation. A report by the World Bank in 2005 indicated that the private real estate developers cover only 0.6% of the housing stock [6]. Even though, the figure reached to 3.8% between the period 2000-2011, it was still very low when compared with 61% by the government and 35.1% by individuals (cooperative and lease) [7].

Governmental effort: Housing provision through condominium is the recent

phenomena in Addis Ababa. Condominium is an individual ownership of a unit in an apartment building and the construction technique that is being used is claimed, though debatable, to result in low cost/ affordable housing. The Addis Ababa city government is currently engaged in the construction of condominiums categorized in to different schemes: 10/90, 20/80 and 40/60. During the condominium lottery held in April 2010 by the City administration, a total of 485,000 individuals, over one-tenth of Addis Ababa residents, have applied for condominium units though only 10,700 apartments were made available, which is only 2.2 percent of the demand [8]. This shows that, despite the government continuous effort, there is acute shortage of residential houses in Addis Ababa.

Co-operatives: Cooperatives are formed by groups of people who gather as an entity to perform the function of a developer. In the absence of affordable private sector in real estate development, cooperatives are one of the efficient options in filling the gaps. They were also one of the most practiced forms of housing development between 1975 and 1991. Cooperatives were allowed to purchase building materials at subsidized rates and had privileges for preferential loans at an interest rate of 4.5% while the normal interest rate at that time was 10% [3].

Individual or private efforts to own a house: Limited proportion of the city dwellers were privileged to own plots of land, upon a payment of facilitation fee only, from the government to build their residential houses. This initiative encouraged many to build a house of their design and promoted private ownerships.

International NGOs: Some NGOs have also been engaged in upgrading urban houses and provision of facilities and services. NGOs like Concern, Oxfam and Norwegian Save the Children Fund have

been involved in upgrading of slum areas and were working together with communities in poverty mitigation efforts in both rural and urban centers in Ethiopia [3].

Squatter and informal settlements by the urban poor: This refers to those rentals or residential housing units built on public owned land without formal legal claims, authorization and permit from the concerned authorities. Extended shelters are the other forms of informal settlements that have been affecting the physical structure of the city.

Sites and services: There have been experiences with this kind of housing arrangement in the 1980's. In this scheme, the government provided land and a facility so that the residents can develop their own housing. The success of the scheme was limited because of many implementation weaknesses. This approach was executed in Bole Bulbula area, where it was noticed that the land remained unused for many years resulting wastage of scarce resources.

Private residential real estates and their affordability

It is widely recognized that provisions of affordable housing for the increasing population in Addis Ababa has been a challenge for over many years. Given the acute housing shortage, the limited financial capacity of urban dwellers and the scarce governmental resources in fulfilling the public demand posed a challenge to policy makers and professionals in the housing sector. The problem is further aggravated by many factors that include unemployment, increase in living and material costs that require continuous effort by all stakeholders. In addition, it is worth noting that affordability is a relative term which is influenced by the built-up area and site location. Therefore, there is a need for

research based innovative approach that identifies the challenges and proposes effective actions.

It is widely understood that housing affordability is affected mainly by two distinct variables; capital and occupation variables. Capital variable is associated with costs in purchasing a house from the market and the ability to finance purchase, whereas occupation variables are associated with costs in maintaining the house. Occupation variable comprises the ability to carry the costs related with land lease and rates, service costs, building maintenance, loan repayment and interest rates [9].

Though, private real estate development is one of the housing sectors engaged in providing housing for the dwellers in Addis Ababa, it was reported that the beneficiaries of the effort are mainly few high-income groups. A study made in 2011, showed that 80% of the city population are categorized under the low-income group. The study further indicated that among 125 registered private residential real estate developers, 83.3% of them targeted high income while only 16.7% respond to the middle-income groups [3].

Demand and supply gap by itself has a high contribution to the affordability situation of housings in Addis Ababa. Based on the 1994 statistical data, the supply of housing units (374,742) was less than the demand (414,262) showing a deficit of 9.5% housing units [10]. The data of government planning and policy commission reported that the deficit has increased to 24.8% within the subsequent ten years (1994-2004), even if the total housing stock delivered has risen to 471,429 with 2.5% average annual increment. The unfulfilled demand for residential housing in 2004 was, therefore, 116,806. Besides, different studies indicated that about 80% of the Addis

Ababa houses (269,814) that are located in the inner part of the city need complete replacement because of dilapidation [11]. In 2010, the housing demand reached to 456,000 housing units.

An overview of the affordability of housing in selected countries

Affordability issue is a serious concern for most of the developed and developing countries.

China

High housing price is a major issue in a number of big cities in China. Since 2005, there was a critical housing affordability problem for middle and low-income families. In 2004, the housing price increased at an annual rate of 17.8% which is almost twice the income growth rate of 10%. In an attempt to boost the housing supply to middle and low-income families, the Chinese government formulated favorable policies, designed and implemented large housing schemes and introduced the Housing Provident Fund program (HPF). HPF provides a mechanism allowing potential purchasers who have an income to save and eventually purchase a unit dwelling [12].

The HPF in China included a subsidized savings program linked to a retirement account, subsidized mortgage rates and price discounts for housing purchase. For residents who earn an annual income between 30,000 – 70,000 RMB which is for middle to low income household, the public housing program provides housing having 60 – 110 sq. m at an affordable prices which is usually 50-70% lower than the market price [12].

Germany

The standard and cost of housing facilities vary greatly among different German cities. The majority of German population earns about 43,596 EUR annually. According to the 2015 statistical data, 16.64% of the population earns more than

92,571 EUR; 42.79% earn more than 62,431 EUR and 78% earn more than 43,596 EUR [13].

Average purchase price for a property in Germany are relatively low. The price ranges from 1,500 - 2,500 EUR per square meter. The average price for a 30-square meter property (a small apartment) is around 60,000 EUR, while 100 square meter apartment averages around 250,000 EUR. Prices are typically up to 50 percent higher in Berlin and Munich than in other cities. Financing is usually provided by banks for about 60-70% of the buying price as mortgage loan [13]. Despite favorable market price and supply, however, only 42% of Germans own their own home when compared to 65 percent in the USA and 69% in the UK [13].

United Kingdom

Since April 2013, there is equity loan available for new property buyer's worth up to 300,000 pounds in the United Kingdom. The equity loan is free of charge for the first five years and can be repaid in 25-years mortgage. Therefore, when an average monthly income is compared with the monthly housing mortgage payment, it shows that it is fairly affordable by many citizens [14].

South Africa

In South Africa, two bed room villa houses were sold for only 360,000 Rand in Johannesburg during the period 2008 – 2010. In 2016, the housing price ranges from 478,203 to 1.93 Million Rand [15]. Thus, when the housing cost is compared with the monthly income of 21,007 Rand, the mortgage payment for 30 years is unaffordable by the majority residents of big cities. However, there are alternative schemes for lower income level in South Africa.

Zambia

Zambia has a housing provision which accounts middle and low-income groups. The housing costs range from 24,382 – 68,363USD where the average monthly income is 2,425USD. Therefore, for a

mortgage payment of 30 years, the houses are reasonably affordable.

Table 1 presents the summary of affordability of houses in the selected countries.

Table 1: The affordability of housing in selected countries [12] [13] [14] [15]

Countries	Monthly average income (middle income groups)	Total housing price including interest payment	Monthly installment	Remarks
China	(3,000-5,000)RMB (≈ 450 - 750 USD)	Big cities (20,000-30,000) RMB Other cities (8,000-20,000) RMB	116.70 RMB for 10 years	Affordable when compared with per capita income
German	3,633 EUR (≈ 4,214 USD)	65m ² costs 150,000 EUR 30m ² costs 60,000 EUR	200 and 500 EUR for 30m ² and 65m ² in 25 years resp.	Affordable when compared with per capita income
UK	2,267 Pound (≈ 2,947 USD)	About 300,000 Pounds	1,000 pounds in 25 years	Fairly affordable when compared with per capita income
Zambia	(417 - 2,425 USD)	68,363 USD there is also low-cost houses (65m ² costs 24,382 USD)	379.79 USD in 15 years	Affordable when compared with per capita income
South Africa	21,007 Rand (≈ 1,533.51 USD)	478,203 Rand to 1.93 Million Rand (34,908.8 USD)	15,940 Rand in 30 years	Not affordable for low income groups when compared with per capita income

METHODOLOGY

This study involves both qualitative and quantitative data that were collected from questionnaires, interviews, document analysis and observation. Representative stakeholders, who are involved directly or indirectly in private residential real estate development, were interviewed. The interviewed parties included: seven real estate developers, five banks/financers (one public and four private banks), municipalities/urban development offices and end users. Interviews were made to study the affordability situation and the standard of private residential real estates. The income and expenditure values were taken from the Central Statistical Agency to analyze the affordability situation in Addis Ababa.

Out of the total 125 registered real estate developers in Addis Ababa investment agency, only 13 developers were actively operating in 2016.

From these actively operating real estate developers, seven of them were selected using the lottery method which is among the simple random sampling technique. The main focus of this study was limited to housing provisions and its affordability. The assessment on the affordability of the real estate houses considered their standard in terms of aesthetics, construction materials and delivery date.

FINDINGS AND DISCUSSION

Housing provisions and challenges in Addis Ababa real estates

Based on the 2015 Ministry of Urban Development and Housing (MOUDH) data, the formal and informal sector of housing supply accounts for 69.8% and 30.2%, respectively. Within the formal sector; housing supply by the real estate developers was only 0.4% while 49.6% and 19.8% were supplied by the government and individuals (cooperatives and lease), respectively.

Due to the dramatic increase in the population of Addis Ababa in recent years, there were about 900,000 people who are on a waiting list for a government sponsored residential apartments (condominiums). Based on the past performances, it is hardly possible to balance the demand and supply gap with in the near future. Without innovative approach, it is likely to see a wider gap between demand and supply that would result in an increase in the prices of residential houses. On the other hand, real estate developers are observed misusing the land for commercial use than its originally intended purpose (residential development). As a result, the government appears to have lost its inspiration in providing incentives to private developers.

Based on international experiences, real estate developments are usually financed mainly by bank loans, client's advance payment and own equities. However, based on the interviews made in five (one public and four private) banks, it was learned that bank loan for private real estate's accounts for only 1% of the bank's business.

The study further revealed that, the sources of finance for real estate developers are 0-1% from financiers, 75% from client installed payments and 24% from their own equity/savings. These data shows almost no loan is given for real estate

developers over the last years. It is also argued that, due to lack of collateral, financiers/banks do not provide sufficient loan for real estate developers which results in substantial delay and even compromised quality. Therefore, the main sources of finance for the real estate developers remain to be from the buyers advance payments, real estate developer's own source, profit from the developers other business if any and contribution from high income buyers who tend to pay in full amount for the purchase of houses.

Usually, banks tend to finance clients to buy houses by providing loan for only limited percent of the contribution cost after the client pays the down payment for the developers. For this reason, some real estate developers have established partnerships with selected financial institutions.

However, to all disappointments, buyers could not access loan by pledging the real estate house which is under construction since the title deed belongs to the developer until the final handover. This puts young and potential buyers in pressure and thus accessing loans becomes extremely difficult.

Generally, loan from banks is limited to people with high income group having substantial assets and convincing cash flows. Lack of long-term finance is a wide spread constraint facing private businesses in Ethiopia in general and the real estate sector in particular. Without adequate funding, developers find it difficult to start and complete their projects on time, within budget and without compromising quality.

AFFORDABILITY ANALYSIS OF PRIVATE RESIDENTIAL REAL ESTATES AND PUBLIC HOUSES

Income/ expenditure of Addis Ababa residents in 2016

In order to judge whether the price set by the private real estate developer are affordable or not, an analysis should be made between the average housing price and the average household income. The average household incomes are determined, based on the household expenditure of potential buyers in Addis Ababa.

Income quintile is a method to measure the household income of residents, ranking from poorest to wealthiest, and then group into 5 income quintiles, (1 being the poorest and 5 being the wealthiest), each quintile containing approximately 20% of the population. Households are often divided into quintiles according to their annual household expenditure. The expenditure for different quintile ranges were gathered from the government source and are summarized in Table 2 [16].

Table 2: Household expenditure at country level (Total 2010/11 National average prices)

Quintile	% of HHs	Annual country level household expenditure in Birr		
		Lower Limit	Upper Limit	Mean
I	20	1,471.48	11,369.98	6,420.73
II	20	11,369.99	15,765.28	13,567.64
III	20	15,765.29	20,657.00	18,211.15
IV	20	20,657.01	28,346.50	24,501.76
V	20	28,346.51	53,572.83	40,959.67

For the analysis, the GDP annual growth rate was used to forecast the total income per capita for 2015/16. The GDP annual growth rate for Addis Ababa is calculated

by dividing the total income by its total population and it is summarized as shown in Table 3 below.

Table 3: GDP annual growth rate [16]

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
GDP annual growth rate	10.4	11.4	8.8	9.7	10.5	8.5	8.7

The growth rate at the final year can be determined by multiplying the GDP annual growth rates within five years starting from 2011/12 as shown below.

$$\begin{aligned} \text{GDP annual growth rate} &= (1 + \text{the nth GDP growth at current price}) \times 100/100 \\ &= (1.088 \times 1.097 \times 1.105 \times 1.085 \times 1.087) \times 100/100 = 156\% \end{aligned} \quad [\text{Eq. 1}]$$

This means, the total income per capita of Addis Ababa residents have grown by 156% for the year 2015/16.

The expenditure of the household can then be determined by multiplying each value on Table 3 of the expenditure quintile measurement with 3.9 (the average household size of Addis Ababa's population).

As a result, the household expenditure quintiles for 2015/16 can be obtained by multiplying average expenditure quintile of 2010/11 fiscal year by the growth factor (156%). The multiplied figures are tabulated as shown on Table 4.

For a healthy economy, there should be a fair balance between income and expenditure. For this analysis purpose, 10% of the total income is considered to be saved by the Addis Ababa residents.

For instance, the total income for low income groups becomes;

$$\text{Total income} - \text{Expenditure} = \text{Saving} \quad [\text{Eq.2}]$$

$$\text{Total income} - 39,096.49 = 0.1 * \text{Total income} \\ = 43,440.54 \text{ birr}$$

Performing the same calculation for all the quintile (1-5), the total household income of Addis Ababa residents is tabulated as shown on Table 4 below.

Table 4: Household expenditure and income of household (2015/16)

Expenditure Groups	Expenditure Quintiles				
	I	II	III	IV	V
Annual expenditure in birr on 2010/11	25,061.85	52,913.78	71,023.47	95,556.83	159,742.70
Annual expenditure in birr on 2015/16 (Multiplied by 1.56)	39,096.49	82,545.50	110,796.61	149,068.66	249,198.61
Household income of Addis Ababa residents (2015/16)	43,440.54	91,717.22	123,107.34	165,631.84	276,887.34

Table 4 shows the household income for those in the mean highest, median and lowest quintile being 276,887.34; 123,107.34 and 43,440.54 birr respectively. This shows that there is a large gap in income level of Addis Ababa residents. Thus, the monthly income of Addis Ababa residents is determined by dividing the annual household income by the number of months in a year (12 months). As a result, 23,073.95; 10,258.95

and 3,620.05 birr are the average monthly gross income values for high, middle and low income groups respectively.

Private residential real estate housing prices and their payment schedules

Table 5 shows the prices of selected real estate apartments, in birr per square meter and the payment schedule in percent to be paid during different phases of the construction for the sampled real estates in Addis Ababa.

Table 5: Prices of selected real estate houses and annotated payment schedule

No.	Real estate developers	Total cost (Birr)	Birr per square meter	Payments schedule in percent (%) during different phases of construction
1	Real estate 1 (94.48 sq. m) 2 bed room apartment	2,144,025.0*	22,692.9	25, 75
2	Real estate 2 (157 sq. m) 3 bed room apartment	3,580,100.0*	22,803.2	30, 10, 20, 20, 12, 8
3	Real estate 4 (174 sq. m) 3 bed room apartment	5,735,500.0*	32,962.6	30, 20, 15, 15, 10, 5, 5
4	Real estate 5 (114 sq. m) 2 bed room apartment	2,775,849.0*	24,349.6	50, 50
5	Real estate 6 (94.70 sq. m) 2 bed room apartment	1,583,351.3*	16,719.7	20,25,25,25,5
6	Real estate 7 (87.9 sq. m) 2 bed room apartment	2,637,000.0*	30,000.0	30, 25, 30, 15

* Average prices that have considered different parameters including location variable

The payment for the real estate houses are arranged in installment payable at different phases of construction. For instance, in “Real estate 1” shown on Table 5, the arrangement is (25%, 75%). This means the down payment is 25% of the total cost of housing while the remaining 75% will be paid in four-month intervals until the money is fully paid. The installments are variable and depend on the will of individual developers.

Affordability analysis and eligibility of a buyer to acquire loan from banks

The potential of getting loan from a bank is analyzed considering the high monthly income value of Addis Ababa residents, which is 23,073.95 birr.

Currently, one of the private banks has a link with most of the real estate developers and created fair arrangement for clients to borrow money by providing fixed assets as collateral. Loans from the bank are usually required to be paid back by the borrowers in a trend set by the bank. As stated on the labor law, it is one third of the borrower’s gross income that is paid every month. Based on an average income of 23,073.95 birr the monthly installment will be one third of it, resulting a payment of 7,691.32 birr per month.

As a routine procedure, banks tend to provide 30% of loan for “real estate 2” from the remaining 70% payment. Therefore, for “real estate 2”, the remaining 70% becomes 2,506,070 birr (see Table 5). Hence, 30% of loan from 2,506,070 birr equates to 751,820 birr.

The payment to the bank at the end of every month is calculated by using Excel PMT function (Eq. 3) or the formula (Eq. 4) as shown below:

$$\text{Monthly payment to the bank} = \text{PMT}(\text{rate}, \text{Nper}, \text{pv}, [\text{fv}], [\text{type}]) \quad [\text{Eq. 3}]$$

where: -

PMT : Payment function

Rate : Interest rate for the loan

Nper : Total number of payments for the loan

Pv : Present value or the total amount worth now

Fv : Future value

Type: is a logical value: - Payment at the beginning of the period = 1, Payment at the end of the period = 0

OR by using the following formula:

$$A = P \left\{ \frac{i(1+i)^n}{(1+i)^n - 1} \right\} \quad [\text{Eq. 4}]$$

Note that for all loan repayment calculations ‘Real estate 2’ is considered so that the comparison of the analysis can be observed. On all calculations, however, grace period is not considered.

Sample calculation for five years loan repayment:

According to the survey done on the loan period of banks in Addis Ababa, only short term loans are made available which is usually a maximum of five years. For “Real estate 2”, at an interest rate of 16% and total number of 60 installment, Nper (which is at the end of each month for 5 years) becomes,

$$\text{Monthly payment for loan to the bank} = \text{PMT}(16\%/12, 60, 751820) = \underline{18,282.83 \text{ birr}}$$

As pointed out earlier, the monthly installment to the bank shouldn’t exceed one third of the household income or 7,691.32 birr per month. In this case, 18,282.83 birr is much higher than 7,691.32 birr. Therefore, a person cannot get loan from the bank and can’t also afford to buy the real estate apartment.

Similarly, in “Real estate 6”, two bed room apartment costs 1,583,351.29 birr. One of the banks has an arrangement with “Real estate 6” to give 50% loan from the total property price which is 791,675.65 birr. Note that, 50% loan will be released from

the bank after the borrower/buyer pays the first 50% of the total cost to the developer.

Then, the monthly payment to the bank for the return of the loan is calculated using PMT, which amounts to 19,252.01 birr. In this case, the monthly payment to the bank is greater than one third of the high income holder. Thus, the bank cannot lend money and clients can't afford to buy the real estate apartment.

Sample calculation for fifteen years loan repayment:

For "Real estate 2"; at an interest rate of 16%, and a total number of payment (Nper) installment of 180 (which is at the end of each month for 15 years),

$$\text{Monthly payment for loan to the bank} \\ = \text{PMT} (16\%/12, 180, 751820) = \underline{11,041.99 \text{ birr}}$$

In this case, 11,041.99 birr is still greater than 7,691.32 (one third of income) birr. Therefore, a person with an average high income cannot get loan from the bank and can't also afford to buy the real estate apartment.

Sample calculation for thirty years loan repayment:

For "Real estate 2", at an interest rate of 16% and a total number of payment (Nper) installment of 360 (which is at the end of each month for 30 years),

$$\text{Monthly payment for loan to the bank} \\ = \text{PMT} (16\%/12, 360, 751820) = \underline{10,110.15 \text{ birr}}$$

In this case, 10,110.15 birr is greater than 7,691.32 (one third of income) birr. Therefore, a person cannot get loan from the bank and can't also afford to buy the house.

For thirty year loan with 11% interest;

For "Real estate 2", at an interest rate of 11% and a total number of payment (Nper)

installment of 360 (which is at the end of each month for 30 years).

$$\text{Monthly payment for loan to the bank} \\ = \text{PMT} (11\%/12, 360, 751820) = \underline{7,159.76 \text{ birr}}$$

In this case, 7,159.76 birr is less than 7,691.32 (one third of income) birr. Therefore, a person can get loan from the bank and can also afford to buy the house. This study verified that the private residential real estates are not affordable for almost all income groups in Addis Ababa unless the interest rate is decreased, payment period is relaxed and household income is increased.

It was the GDP growth rate that was used to account for the household income. But GDP has some short coming where it fails to count the economic activity that do not necessarily increase the household income.

Human development index (HDI) is relatively a better tool in explaining the income distribution. Had the analysis be based on this index, the result on the household income level would have been reduced which in turn could have aggravated affordability situation.

Affordability of public housings in relation to income of Addis Ababa residents

The government has introduced public housing schemes with initial down-payment options of 10, 20 or 40 percent of the house value that can be saved over a period of time at the government-owned Commercial Bank of Ethiopia (CBE), which is also the mortgage provider for the remaining 90, 80 and 60 percent respectively.

The construction costs of the public condominiums under the scheme are, however, adjustable based on the market price of construction materials and labor. The total cost and expected monthly

payments for the three types of housing schemes are summarized on Table 6.

Table 6: Public housing schemes (10/90, 20/80 and 40/60) [17]

No.	Housing schemes	Size of the apartment	Total cost (Birr)	Cost per sq. m.	Monthly payment to the bank
1	10/90 (10% saved for three years and 90% loan provided by the CBE)	Studio flat (31 m ²)	67,320.0	2,171.60	187.00
2	20/80 (20% saved for seven years and 80% loan provided by the CBE)	One bed room (50 m ²)	127,000.0	2,540.00	302.40
		Two bed room (70 m ²)	224,000.0	3,200.00	533.30
		Three bed room (85 m ²)	304,000.0	3,576.47	723.80
3	40/60 (40% saved for five years and 60% loan provided by the CBE)	Two bed room (50 m ²)	701,270.0	4918.00	4,675.10
		Three bed room (70 m ²)	847,650.0	4918.00	5651.00
		Four bed room (85 m ²)	950,000.0	4918.00	6333.3

The 40/60 scheme welcomes diaspora Ethiopians and encourages those who can deposit to pay upfront. For the 40/60 group savings will earn a 5.5% interest over the 5 years and the loans will have 7.5% interest instead of 9.5% market rate to be paid in 17 years. According to the latest data, the original price of 40/60 was increased by the Commercial Bank of Ethiopia (CBE) from the previous 3,200 birr per square meter to 4,918 birr per square meter on the delivery date. In total, there is an increment of 124,000 birr by the CBE during the delivery of houses. This is claimed to be from the increasing interest payments. Therefore, it is difficult to conclude on the affordability of condominium houses while there is such type of unexpected price increment on the buyers.

Using the expenditure and GDP data for Addis Ababa presented on the previous sections, the monthly gross income ranges for low, middle and high ranges are (828.90– 6,405.10), (8,881.10– 11,636.80) and (15,968.50– 30,179.40), respectively. This means, if the prices of the public

houses remain constant, it will be affordable for middle income groups.

However, if there are price adjustments due to price escalation of construction materials, the housing scheme might end up being unaffordable to the average Addis Ababa residents which have not yet received their houses.

Cost comparison of the public and private real estate housing with the market

The cost per square meter for public and private real estate houses are shown on Table 7. The market price was also checked to evaluate the cost differences that exist between the public as well as the private real estate houses. The comparison shows that, the cost per square meter of the public houses are on average 70.5% lower than the market price. This means, the official cost of public houses is only 29.5% of the average market price indicating that it will be difficult to expect quality apartments. This analysis, however, does not account for the price escalation that may arise due to inflation

and other cost factors. On the other hand, the costs per square meter of private real

estates are on average 132% higher than the market price.

Table 7: Cost comparison of the public and real estate housing with the market

Market price(Cost per m ²)	Public houses (Cost per m ²)	Public houses avg. cost difference (%)	Real estate houses (Cost per m ²)	Real estate houses avg. cost difference (%)
6,000-18,000	2,171.6 – 4,918	-70.5%	22,692.9 - 32,962.6	+132%

Overview of the standard of private residential real estate houses

In this study, the standards of real estate houses were observed from three perspectives: (i) Construction supervision, design and material on site, (ii) Completion time and delivery of houses according to the contract and (iii) The quality of real estate houses in relation to provision of infrastructure and services. These three items were considered in the study since affordability assessment relates with the standards of the delivered housing [18].

Construction supervision, design and material on site:

Each real estate has its own way of price fixing. Construction supervision and construction materials used during construction can be taken as methods in determining the standard of housing. Table 8 shows the outline summary of the real estate’s construction material and supervision during the construction.

As “Real estate 2” is simultaneously a consultant and an owner of the project, the existence of conflict of interest is inevitable.

This may lead to compromised quality of the houses. Despite the low-cost materials used by “Real estate 2”, “3”and “4”, the price set for purchasing the houses are very high which shows potentially unreasonable profit margin. Since “Real estate 5” is an international developer, all designs and documents are done using foreign language. Therefore, it is difficult to comment on it.

Before setting the prices of the houses, due care and careful assessment should be made on different factors that affect the housing prices. Since customers consider different alternatives before concluding contract, it is unfair to make a substantial price adjustment afterwards unless otherwise there are unforeseen conditions. However, “Real estate 6” adjusted the housing price that created inconvenience to the customers. “Real estate 7” adopts design-build-transfer project delivery method where the contractor has a share with the real estate company and contractors are thus selected to do the project without competitive bidding. In all sampled real estates, there were no new major technologies used during the execution of the project to speed up the construction work.

Table 8: Construction material, design and supervision

No.	Private residential real estate developer	Data gathered regarding construction material and supervision	Description	Birr/ m ²
1	Real estate 2	Three classification based on wall and slab material	Low cost – ribbed slab and prefabricated beam High quality – solid slab and HCB wall material Top quality – solid slab and brick wall material	22,803.20
		Have the same consultant and owner	This arrangement will create conflict during supervision and quality control	
2	Real estate 3	Use low cost wall making material	Hydra foam wall material which does not require external finishing works	7,000.00
3	Real estate 4	Low cost material used	Agro stone partition wall and ribbed slab system	32,962.60
4	Real estate 5	Chinese construction company	Use their own language (Chinese) on the design which makes it difficult to comment on the designs and documents.	24,349.60
		One company designs and constructs the apartments	The apartments were constructed by totally adopting Chinese code/ standards	
5	Real estate 6	Price increment due to design change	Unexpected cost due to price escalation	16,719.70
6	Real estate 7	Increase working hours in an attempt to deliver on time	Use ready mix concrete or night construction permit (work 18hrs per day).	30,000.00

Completion time and delivery of houses

Delay in completion time and delivery of houses is one of the common problems identified in all the sampled private real estates. According to the interview data, delay in the delivery of finishing materials, price escalation, lack of foreign currency, inaccessibility to loan, unavailability of municipality supervising inspector at different stages of the project implementation, delay in client approval, design change either from the client or the design team and unpredicted conditions on the site are some of the challenges that causes delay in completion time and housing delivery. In order to reduce the late delivery of houses, the government has set a penalty on real estate developers.

Even if some of the root causes that push late delivery are beyond the control of real estate developers, the penalty alone could not alleviate the problem. Due to internal and external factors, unfortunately, developers are unable to meet the deadlines. This creates unnecessary disputes between the developers and the clients.

Infrastructure and services in a real estate sector

The commercial amenities around the developed real estates like shopping malls, supermarket and gymnasium differ depending on the location of the development. It is observed during site visits that 71.4% of the sampled real

estates do not have any commercial buildings within the real estate housing compound. Only “Real estate 5” and “Real estate 6” have made some effort to implement those facilities.

Regarding greenery and parking area, there is a standard set by the Municipality of Addis Ababa where most of the villa houses satisfy parking and greenery requirements. However, apartments in “Real estate 4” and “Real estate 7” are either confined or do not have any space for greenery area and the parking space is underground where only one parking space is provided for one household especially the ones located around Bole area. Even though there are rules and regulations set by the municipality, the monitoring and control is minimal and the office lacks proper professional handling in the permit approval processes.

CONCLUSIONS

The major conclusions are listed as follows:

1. Given the average household income of the Addis Ababa city residents, the housing price by private real estate developers are not affordable by all income levels.
2. Due to the internal factors (such as, delay in the delivery of finishing materials and design change) and external factors (such as, lack of foreign currency and price escalation), the contribution of real estate sector in reducing housing demand for the majority appears to be nonexistent.
3. The selection of quality materials and application of innovative methods have not been given sufficient attention by the private residential developers.
4. Minimal efforts have been exerted to adopt the world’s best practices incorporating low interest rate management and extended loan repayment scheme.
5. Almost no loan is given to private real estate developers from public as well as private banks and the real estate’s income depends mainly on advance payments and their own resources.

RECOMMENDATIONS

The following recommendations are forwarded:

1. In order to make private real estates affordable to the average income residents, all concerned stakeholders should jointly work in reducing the impacts of the internal and external factors.
2. Municipalities and relevant offices should enhance close follow up and supervision on land utilization rather than blocking new land allocations.
3. The government should reconsider the introduction of special interest rates for mortgage loans and set a policy on price allocation of real estate developers based on quality, location and housing delivery time.
4. Real estate developers and financial institutions should work together in finding ways to facilitate long term payment arrangement lasting 25-30 years.
5. International real estate developers need to be encouraged to invest on housing development in Addis Ababa to facilitate technology transfer and stabilize building cost.

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