International Conference on African
Development Archives

Center for African Development Policy
Research

8-2007

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Investors' Willingness to Pay for Urban Land:
The Case of Addis Ababa City

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Submitted to

The Fourth International Conference on Ethiopian Development Studies (4th ICEDS) on THE CHALLENGES AND OPPORTUNITIES FOR PEACE & DEVELOPMENT IN ETHIOPIA & THE HORN OF AFRICA, August 2-4, 2007, 2000 Schneider Hall, Haworth College of Business, Western Michigan University, Kalamazoo, USA

Acknowledgment

April, 2007b

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Abstract

The spatial, physical and socio-economic conditions of Addis Ababa City, in general, is by far behind the requirements fundamental to sustain the livelihood of the city. In addressing the problems of the city, the suggested government intervention strategies include, among others, the relocation and resettlement of residents for efficient utilization of potential sites, and bringing balanced and coordinated investment/development in different parts of the city. These strategies, so far, seam to concentrate on the supply side and neglected the effective demand of the majority of investors.

This study, therefore, aims to assess determinants of investors' willingness to pay for a particular urban land in the city. The study may help the decision makers in developing a win-win strategy in urban development sector policy in terms of achieving economic growth and improved urban development. Moreover, it may be an addition to the existing scarce literature on the issue.

Data on the City's land auction between 1994/95 and 2002/03 is the main source of data to address the issue of investors' willingness to pay for urban investment land. Other relevant secondary data are also used as a source of information. We used ordinary least square estimation to analyze the determinants investors' value on urban investment land. The study findings indicated that investors' offer value (as measured by their markup price) for a particular urban land is positively affected by plot grade, investors' capital, accessibility to basic services and plot for apartment. Investment cost negatively affects investors' willingness to pay for particular urban land. Benchmark or floor price of the plot positively affects their markup value. The study, in particular, suggests that investment opportunities ought to be given to private investors since they are willing to invest and offer higher price given the investment land has access to basic social services, and priority is given for some investment sector.

1. Introduction

1.1. Problem Statement

Ethiopia is currently facing several social and economic problems. Its cities are confronted mainly with extensive poverty which is characterized, among others, by environmental problems and underdevelopment of physical infrastructures. Addis Ababa, the capital city of Ethiopia (head quarter for African Union), accounting for about one third of the country's urban population, is experiencing multiple challenges to be addressed, one of which being the provision for a decent life to its residents. Its existing built-up area is characterized by dilapidated structures, congestion, environmental related problems and poor urban image, shortage of and low quality infrastructure, basic services and inefficiencies in land utilization.

According to studies by the Office for the Revision of the Addis Ababa Master Plan (ORAAMP), an estimated 60 percent of the city core is dilapidated, and about a quarter of all housing units have been built illegally and informally. Shortage of housing is acute especially for low-income households that account for over 80 percent of the city's population. Overcrowding and deterioration of housing are commonplace in the city. As indicated in a study by the Addis Ababa Water Supply Agency, 82 percent of the population in the city lives in unplanned, high density and low standard housings, 30 percent and 20 percent of which lack waste water and kitchen facilities, respectively. Another study by the National Urban Planning Institute (NUPI) indicates that a substantial proportion of the housing stock in the city is considered to require upgrading, while about 15 percent is beyond any kind of repair.

In addition to aggravating environmental problems of the city, the lack of service provision exacerbates the already poor living and working conditions. ORAAMP reported that only less than 65 percent of the reachable solid waste generated in the city is collected, the remaining being simply dumped in open sites, drainage channels, rivers and valleys as well as on streets. About 67 percent of the people in the city use dry pit latrine and 42 percent of the existing public latrine facilities are used by 4 to 9 households and are characterized by overflows. Rivers and streams have also become open sewers where households' liquid wastes, industrially toxic and hazardous effluents are discharged without being treated, hence, negatively affecting animals and people living along the valleys. The existing sewerage system is serving only about 15 percent of the City's population. Likewise, over 25 percent of the residents are without any kind of sanitation facilities whereby even the existing latrines are not emptied on time. This glaring shortcomings, coupled with low water consumption (30 lt/day/ person) plus the ever increasing vehicular traffic, posing sever air pollution and noisy conditions; have aggravated the sanitation problems of the City. National figures show that these problems are leading causes of acute respiratory infectious, skin and parasitic diseases, resulting in mortality and morbidity. Flooding also has had great impact on people who have settled in vulnerable areas of the city. In 1987, 108 Kebeles (out of 289) and in 1994, 7,655 people were affected in death and loss of houses, among others (Tewodros and Zeleke, 2001).

There is a marked gap between the demand for basic services and the supply of those amenities by the City Administration to keep pace with the expectations emanating from the scale of change the City undergoes. ORAAMP indicates that basic services (like telecommunication, media, roads, hotels, education and health) and such facilities as

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recreational centers in Addis Ababa hardly meet the standards provided by other competitive African cities.

Addis Ababa has increasingly been expanding haphazardly and horizontally along the five regional outlets. This experience, however, gives little concern for sustainable expansion possibilities and only adds inefficiency in land utilization.

In general, Addis Ababa City is characterized by deteriorating environmental conditions and limited economic development. The spatial, physical and socio-economic condition of Addis Ababa City, in general, is by far behind the requirements fundamental to sustain the livelihood of the City's population. The City is faced with many challenges and it requires embarking on sustainable development efforts -actions that brings development reinforced by protection of the environment. The limitations of its current developmental trend and the depth of the existing environmental problems, coupled with the requirements of the projected population of about 3.8 million people by the year 2010, entail reexamination of constraints and opportunities with the aim of devising appropriate measures and strategies for action. The suggested government intervention strategies, as stated in the Addis Ababa City Development Plan 2001-2010, include:

- Bringing balanced and coordinated investment/ development in different parts of the City, and

- Relocation and resettlement of residents for efficient utilization of potential sites (basically slum areas) and resources.

In relation to the suggested government strategies of bringing balanced and coordinated investment/ development effort in different parts of the city, studies (see, for instance, that by ORAMP) indicate that the major causes of uncoordinated and scattered development and difficulties for private investors include: lack of an efficient system for redeveloping underutilized areas. Moreover, the lease obstacle and long-lasting bureaucratic procedures together with resource limitations within the City core have greatly contributed to that end. The land lease regulation of the City in itself, particularly during its introduction, has not only faced criticism and rejection from the City's inhabitants but is also considered the most influential factor for the unhealthy, haphazard and unbalanced investment environment in the City. A survey report by the Foreign Investment Advisory Service (2001), for instance, indicated that the costs (price) of acquiring an appropriate piece of land in the City are prohibitive and some investors are forced to seek land in other regions. The land lease policy value in the city varies depending up-on the specific location of a site (which is graded on the level of infrastructure development supplies such as road, water, telecommunication, education facilities, etc.).

To this end, the existing land price policy in the City concentrates on the supply side and seems to neglect the effective demands of the majority of investors in the City. The implementation of such policy decisions should also focus on the demand as opposed to the supply side thereby adjusting pricing mechanisms and regulatory measures. Pricing of land is the key component of an appropriate incentive for balanced and coordinated investment/ development in the different parts of the City; moreover, the need to fill the gap of information on the demand side for policy purposes is timely. Therefore, research on the

demand side in order to understand the fundamental importance of the value the investor places on land characteristics is crucial.

1.2. Research questions

In the light of the above arguments, this study will attempt to answer the following questions:

- What factors do investors consider in their decision to investment?

    o What factors (including distance from the center, accessibility to basic services, size of the land, capital, lease period, type of investment, etc.) determine their willingness to pay for a particular land?

- What is the relative strength of investors' consideration regarding each investment decision factor?

1.3. Objective of the study

The objectives of the study are to:

- examine the determinants of investors' willingness to pay for land,
- examine the relative strength of investors' consideration regarding investment decision factors, and
- draw conclusions that might help in the establishment and implementation of policy guide framework.

1.4. Hypothesis of the study

The main hypotheses of this study are:

- investors are willing to pay more for urban land with better accessibility to basic services
- investors' willingness to pay for a particular land is positively related with investors capital,
- lease period has significant effect on investors' willingness to pay, and
- type of investment has a significant effect on investors' willingness to pay.

1.5. Significant of the study

The study will help the decision makers in developing a win-win strategy in urban development sector policy in terms of achieving economic growth and improved urban development. The land lease regulation in Addis Ababa City has faced a lot of critics from the City inhabitants. Thus, the results of the study may contribute to the debate that exists on the land lease policy issue since it focuses on the demand side as opposed to the supply side where current land pricing is mainly based on infrastructure development.

The study can be considered as an addition to the limited literature available on valuation of urban land. Given the appropriate dissemination mechanism, it is hoped that the results of this study will have an impact on the academic community, governmental and non-governmental organizations, policy makers and the public at large.

2. Background

2.1. Investment land allocation in Addis Ababa City

2.1.1. The Institutional and Legal framework

Ethiopia's transition to a market oriented economy began with the installation of the new Government in 1991 and the introduction of an economic development agenda aimed at achieving macroeconomic stabilization and growth. In this development agenda investment has been considered as an engine of growth and generates economic benefit. Since then major reforms, policies and institution frameworks have been established to directly or indirectly promote investment in the country.

The legal framework for the transfer of private land use rights was developed in the years following the 1991 Transitional Period Charter of Ethiopia, which later (in 1994) ratified by

the Constitution of the Federal Democratic Republic of Ethiopia. Starting with the investment Code Reform No. 15/1992, the government established the Ethiopian Investment Authority (EIA) to service investors. And in 1993 a proclamation (Proclamation No. 80/1993) was officiated for the lease holding of lands, which was later enacted by the Urban land lease holding proclamation No. 272/2002.

A critical step in these legal reforms was the separation of the right to use land from the ownership of the land, which allowed the state to continue to own the land (means of production) while creating a tradable claim on land, the 'use right'. The current land policy in Ethiopia is that land belongs to the state and the people, and no land can be obtained or transferred other than on a leasehold[1] basis. The authority to sell land leases and determine the terms of redevelopment rests with the Regional Governments. And the power over land lease by the individual regions is supposed to crease incentives and opportunities for them to attract investment capital and promote developments in their jurisdictions.

Moreover, the federal land proclamation has given the power to Regional Governments to issue laws and regulations for detailed implementation of the proclamation. The onus for allocating land for investment activities, and creating leases and setting rentals on land to be transferred to investors rests with them. Accordingly, the Addis Ababa City Government (Region 14) set-up its own urban land leasehold regulations in 1994 (Proclamation No.3/1994), which was later enacted by Proclamation No. 29/2002.

In this City, land is permitted to be held by lease through auction, negotiation, lottery systems, assignment or as a form of prize. Though there are various mechanisms (such as

period of grace, lease period and lease payment period) through which the city government encourages certain investment sectors (particularly social service investments such as education, health and sport, and large projects), currently investment plots in the City are made available through an auction system for long-term leases, which ranges from up to 15 years for urban agriculture to up to 99 years for such as housing (personal and leasable), science, technology, and research and study. There are no restrictions on the eligibility of bidders for the auctions.

Negotiated bid, where an investor may independently identify a suitable piece of land and enter into direct negotiations with the city's Land Office, has been an alternative mechanism to the auction system until the recent enactment of the regulation by the city government that stipulates plots would only be available through tenders.

2.1.2. Land auction in Addis Ababa City

In Addis Ababa City, as discussed above, the city government releases public land for private developers through the auction of land leases. Plots of land are released for auction openly at the government's benchmark or floor price and the bidders submit their offer for a particular site in a closed envelope. The auctions are open to all interested developers and there are no restrictions on the eligibility of bidders. Each auction site has specific land use parameters to be made public through media and to be posted on the City's bi-weekly newspaper Addis Lisan. The location (Woreda, Keble), type of development, floor price, lease period, lease payment period, lease grace period, etc. for each auction site are made accessible to the bidders. Land auctions in the City, therefore, can be characterized as

common value auctions in that the developers' valuations of the sites are based on the same land use parameters and the same underlying market conditions.

2.1.3. Land auction floor price setting in Addis Ababa City

Currently government auction floor prices in Addis Ababa are set based on the development condition of the specific site. This condition gives weights to the topography of the site (slope, soil type and texture/morphology, bearing capacity, hydrology, etc.), its existing and planned engineering and economic infrastructures (road, drainage, sewerage, electricity, transportation and communication, water, business area, etc.), its access to social and administrative infrastructures (health, education, police stations, fire-extinguishing, stations, sport and recreation, worship place, green areas, etc.), housing condition (function, typology and condition, etc. of the house), and urban plan of the city (land use and function, and building blocks).

Moreover, the floor price of a specific plot in the city depends whether the plot is in the Central Business District (CBD): areas with access to transport and communication that attract more people and socio-economic activities, Zone of Transition (TRZ): areas in between the CBD and SUR, and Suburban and Urban-Rural Fringes (SUR): areas that are good for residence.

Accordingly, plots in the city are graded in 5 levels and the auction floor price of a plot in the city is set as in Table 1 (See Appendices).

3. Previous research on Land valuation

Understanding the fundamental importance of the value the investor/urban developer places on land characteristics is a crucial component in bringing balanced and coordinated urban development. In this respect there are studies addressing issues related to valuation of urban land and urban investment. Yuming and Stephen (2001), for instance, applied event study to analyse government land auction in Hong Kong to detect the economic profit that land developers are able to earn on their land acquisitions. Using the Ordinary Least Square (OLS) estimate, among others, they show that when the auction price of a site falls short of its competitive market value, the winner's market value is enhanced entailing a positive abnormal return on its stock, as a result of the anticipated economic profit in the development of the site. They find a positive average abnormal return for the auctions between 1986 and 1998 where the winner is a publicly listed firm. Moreover, they find higher abnormal returns for more valuable site and land market conditions discourage competition. They also suggested several areas where government policies may help enhance competition in the land market.

A study by Yuming, Tsur, Mengdi and Tongcheng (1999) reviews the urban redevelopment activities in Shanghai as the land market reforms were introduced. It focuses on the impact of land use institutions on the spatial pattern of these activities. Their review shows that sites for private real estate redevelopment were supplied by individual districts in the city. But the need for district to pay for the resettlement of displaced residents contributed to a spatial mismatch between the supply of redevelopment sites and the market demand for commercial real estate space. According to the review, resettlement costs are highest at the high demand locations. State owned enterprises and institutions occupying land allocated

by the state also engaged in real estate development. Whereas the density of private redevelopment was sensitive to the volume of commercial activities in a district, this does not appear to have been important in determining the location of significant increase in the stock of commercial space resulting from development by local enterprises and institutions.

According to a study by Sevkiye (2003), three land acquisition methods are applied in Turkish urban areas: Voluntary method, the land readjustment method and expropriation. The study indicated that these methods have some problems in both theory and practice and hence its purpose is to investigate whether these methods work efficiently or not. To reach this aim, the study stated various hypotheses and tested them using descriptive statistics, cross tabulations and chi-square tests. In this study, a sample survey is used and 568 questionnaires are completed by Planning Office of the Municipalities of urban areas in different population groups and 169 questionnaires are realized by surveying engineers in Turkey. The overall conclusion of the study is that none of these methods are used efficiently in practice and the legal sources cause this.

There are also studies specific to the Ethiopian context. In his theses, "Urban land in transition: policy, problems and practices in Addis Ababa", Abrham (1995) analyzed the possible social, economic and financial, and institutional implications of the government Land allocation policy in the City. Despite the fact that the majority of the investment community and the population favor the free hold system and the government the leasehold, he argues the possibility of reconciling these two different attitudes and achieve an efficient and equitable land use, provided that the provision of a grace period and the benefit right to previous land holders, subsidizing (in terms of plot of land) the right group,

decentralizing responsibilities and overcoming other administrative constraints, among other, are paid due attention.

Another study by PADCO/ WAAS/ NUPI (1997) analyses the land and housing sector in selected Ethiopian towns, including Addis Ababa. The primary objective of the study is to provide a diagnosis of the current state of Ethiopia's land and housing markets. This diagnosis includes data and analysis related to the pace and spatial pattern of urban residential land development; changes in the housing stock over the past 10 years; current housing conditions; and prices of land and housing. In addition, the study identifies the major problems and constraints thwarting the efficient operation of Ethiopia's urban land and housing markets. The basic technical approach taken in the study centers on a broker survey of land and housing prices and analysis of aerial photographs, supplemented by field reconnaissance, to gauge changes in residential land use and housing stock. The main finding of the study is that Ethiopia's urban land and housing markets are under considerable stress and there is substantial imbalance in the demand for and supply of housing in urban areas.

The Foreign Investment Advisory Service (FIAS), 2001, also conducted a survey of foreign investors in an effort to provide assistance to the Ethiopian Investment Authority (EIA) in developing a framework for a basic strategic approach to promoting Ethiopia as a location for investment. The report of their survey outlined the current trends in foreign direct investment (FDI) globally and in the Eastern and Southern Africa region, investors' perceptions of Ethiopia as a destination for foreign investment, Ethiopia's potential opportunities for attracting FDI, a review of the environment for foreign investment and

identification of policy issues that need to be addressed, a framework for Ethiopia's strategy for investment promotion, the role of the EIA in advocating for policy and regulatory improvements, and investment promotion activities of EIA. Respondents to their survey of investor perceptions indicated that Ethiopia is high -priced relative to neighboring countries (mean score of 5.2 on a scale of 1 to 10). Respondents generally compared Ethiopia's investment climate unfavorably to that of Uganda, Tanzania and Kenya. As indicated in the report, Morisset (2000) found that Ethiopia's business climate ranking decreased relative to that of other Sub-Saharan countries during the period 1990-1997. The survey identified a number of factors that affect the business environment in the country. In particular, the report suggested that many of the factors that affect the price of doing business in Ethiopia are within the control of Government. Priorities for addressing these issues, therefore, need to be established. It also suggested that efforts to improve bureaucracy, infrastructure, cost and availability of land, the commercial legal framework, among other factors will contribute to reducing the cost of doing business and making Ethiopia more competitive relative to its neighbors.

To this end, the existing literature depicts that pricing of land is the key component of an appropriate incentive for balanced and coordinated urban investment/ development. Moreover, there is still the need to fill the gap of information on the demand side so that the fundamental importance of the value that the investor/ urban developer places on land characteristics is better understood.

4. Methodology
4.1. Data type and source

The main data source in this paper is the Addis Ababa City Government land auctions between 1994/5 and 2002/03. During this period more than 7000 plots were auctioned in 43 rounds. The data on all rounds of auctions are made available from the Land Administration Authority of the City. However, the available data on auction rounds 1 to 40 and round 42 were not adequate and hence are not included in the regression analysis. Moreover, auction round 41 and 43 do not only represent the current land market scenario in the city but also they included a good number of auction plots and bidders (about 472 bidders). And hence this data set, after it is made complete from various sources, is used in our multivariate analysis for 366 bidders. Relevant documents from the Addis Ababa municipality and Master Plan Office and other relevant documents have also been used as secondary sources. The Addis Ababa City Government Bench mark price map has been used as a source of information. Moreover, other relevant data are extracted from the recent land lease implantation and land market report (1987E.C - 1995E.C) of the Land Administration Authority of the City.

4.2. Model Specification

Both descriptive and Multivariate-analysis are used to analyze the variation in the offer prices against observed auction and land market variables in the City. The information obtained from the auctions is described using percentage. Multivariate analysis is used to estimate a function that relates bidders' offer to the observed auction site characteristics. The estimation of this functional relationship helps to understand the relative strengths of

the characteristic variables on the bidders decision to offer for a particular site. Table 2 (see Appendices) specifies the variables included in the OLS estimation.

The estimation equation is specified using the Ordinary Least Squares (OLS) method as[2]

$$\mathbf{MUP_i} \ = \ \alpha_i \ + \ \sum_{j=1}^{J} \beta_{ij}.S_{ij} \ + \ \varepsilon_i \ \dots\dots\dots\dots\dots\dots\dots\dots 5$$

Where MUP_i is the markup of the price offered by bidder i over the bench mark floor price of the specific plot he/ she is competing, α and β are parameters of the model, Sij is a set of J auction plot characteristic/ explanatory variables (as specified in the table 2), and ε_i is prediction errors.

5. Study Findings

5.1. Investors' Value of land in Addis Ababa City

5.1.1. Description of land auctions

The City Government of Addis Ababa carried out 43 rounds of lease auctions in the years between 1994/95 and 2002/03. These auctions are described in Table 3 (see Appendices).

Table 3 suggests a number of points. The number of auctions launched each year is not the same: only one round of auction is launched in 2001/02 while seven rounds in 1994/5 and 1998/9 each. The number of plots available to auction increased each year except for 2001/02 and 2002/03. In 2001/02, in particular, only 41 plots are made available. Revenue collected from sell of land does not show a sharp increase across the years, however, the revenue in 2002/03 show a drastic positive change. The ratio of the number of bidders to number of available plots increased as of 1999/00. In 2002/03, for instance, about 14 bidders have been competing for a plot on average. On the other hand, there has been a huge gap in the number

of plots made available for auction and the number of plots sold. Except for 2001/02, only very few percentage of the available plots (for instance only 15 percent in 2002.03) are actually sold each year.

As seen from the point of view of the number of bidders versus the number of plots available for bid, the data shows excess demand for land. On the other hand, it is vivid from the data that a huge percentage of the available plots are not sold consistently in each auction round. These suggest that investors or bidders could not ultimately buy (leased) the plot once they have been participated in an auction.

5.1.2. Auction Land Markup price and Characteristics (Round 41 and 43)

This section describes the variation in the auction land markup prices offered by investors, during auction round 41 and 43, against the characteristics of the auction land.

A total of 472 bidders have been participated in the Addis Ababa City land auction in round 41 and 43. As seen in table 4 (see Appendices), more than half (53 percent) of the total bidders were competing for plots that were made available for different purposes while 25 percent, 21 percent and only 1 percent of the bidders were for apartment, industry and for fuel station plots respectively. Table 4 also shows that the mean markup price (per M^2) offered for plots that are made available for different purposes is high (Birr 865.85) with standard deviation of Birr 681.11 and very high range of Birr 3015, between the minimum (Birr 5) offer and the maximum (Birr 3020) offer. On the other hand the mean markup price offers for industrial plots is the lowest (Birr 211.61) with standard deviation and range of Birr 185.62 and Birr 1170.12 respectively.

The mean markup price offer for Grade II_3 plots, as described in Table 5 (see Appendices), is the highest (Birr 934.13) with standard deviation of Birr 808.41 and a range of Birr 2485.00. The average markup price for Grade III_3 plots, on the other hand, is the lowest (Birr 213.06). Moreover, a highest difference (Birr 3015) between the minimum and maximum offer is observed for Grade III_2 plots while a lowest range (Birr 486.67) is observed for Grade IV_2.

The result also shows that the mean markup price for plots in the zone of transition (TRZ) is Birr 934.13 with a range of Birr 2485 between the minimum and maximum markup price offers. And this mean value is greater than the mean markup price (Birr 632.54) offered for plots in the suburban and urban-rural fringes (SUR), however, the markup price range (Birr 3020) for plots in the SUR is larger than that of TRZ. It is also observed that the mean markup price offer for plots with relative poor access to basic services (for in stance, Birr 422.54 for Grade 3 plot) is lower than those with relatively better access to basic services (for instance, Birr 842 for Grade 2 plot). Moreover, relatively higher markup price range (Birr 3015) is observed for Grade 2 plot than that of Grade 3 plot (Birr 2487).

Differences have also been observed in both the means and ranges of the markup prices offered for plots in auction round 41 and 43. The mean markup price for plots in round 41 is Birr 698.50 with a range of Birr 3019, while in round 43 the mean markup price is Birr 472.36 with a range of Birr 1201.12.

The pattern in the auction land markup price offer by bidders, as seen in figure 1 (see Appendices), does not follow (either positively or negatively) the trend in the size of the

auction plot. The figure also shows that the number of bidders for a particular plot does not depend on the size of the plot.

In general, the above description suggests that the auction land markup price offered by investors varies across the different characteristics of the auction land. In particular, it varies across the types of investment sector the plot is meant for, plot grades, its distance from the main center and its access to basic services. The description also suggests that there is a marked difference between the minimum and maximum markup price that investors are offering for a plot. Moreover, the auction land markup price offer by bidders is not affected by the size of the auction plot.

5.2. Determinants of Investors Willingness to Pay for urban land

Since land auctions in Addis Ababa City, as described earlier, are open to bidders, land auctions in the city can be characterized as common value in that the investors'/ developers' valuations of the sites are based on the same land use parameters and the same underlying market conditions. Even if the land market in the city can predict the winner with a positive chance, it is unlikely that the market can predict the winning price, as the predictability of the price would defeat the very purpose of the auction. The competitiveness of bidding at the auctions and hence the price land developers/investors offer for a particular site in an auction is individual and is affected by observed and unobserved characteristics of the site. This section examines the factors determining the amount investors are offering for a particular auction plot.

Multivariate analysis can give better information and greater insight into the factors that affect investors willingness to offer for auction plot. In our analysis stepwise deletion of variables is used to identify explanatory variables that better influence the explained variable.

The final results of the multivariate analysis are presented based on the Ordinary Least Square regression model. Such a presentation helps to examine whether or not investors willingness to pay, as measured by their markup price, bids are related to the auction characteristic variables systematically or not. The estimation results are presented in Table 6 (see Appendices).

 The F-value, 14.921, shows the overall model for the estimates of the OLS regression as a good fit. Also the adjusted R squared, 0.256, illustrates that the regression explains 25.6 percent of the total variation in investors willingness to pay, i.e. markup price for auction land. This implies that the introduced explanatory variables in the estimated equation are not the only variables that affect investors' markup price for land. This is certainly the case; a number of other factors (such as human factors) can also explain the variations in WTP bids.

The result also shows a negative and highly significant coefficient for access to basic service. It confirms that investors are more willing to pay for plot with better access to basic services (as seen in Table 2, this variable is specified as 1 through 5 where 1 representing plots with batter development condition, and so on). This is inline with our expectation and the result also complement the auction plot bench mark setting criteria of the Addis Ababa City Government which assigns a higher price for plots with relatively better development conditions. The same positive and significant result has also been obtained for land grade

explanatory variable as per the city government plot grade criteria (which, as seen in Table 4, graded plots as grade II_3, III_1, III_2, III_3, IV_2 and IV_3).

However, our result on the relationship between investors WTP for a plot and the distance of the plot from the center of the City shows insignificant coefficient for the later variable, even at 10%. It can be said; therefore, that distance from the center is not a critical important factor that investors are taking into consideration in their decision to offer for auction plot in the city. This is inline with the recent report of the City's land administration authority, which suggested a upward revision of bench mark price setting in the eastern part of Addis Ababa such as 'CMC' and 'Bole Kotebe' areas.

The sign of the coefficient for bench mark/ floor price variable is positive and significant. As this variable is specified as a cite value variable, it is expected that investors are willing to offer more for the plots with higher site value, particularly in the absence of finical constraints.

The OLS estimation result shows that the coefficients for investment sector dummy variables have the same positive sign for apartment plot, industrial plot, and the plot for different purpose. However, only the former is significant. That is investors decision to offer for auction land is not importantly affected whether or not the auction plot is for industrial and/or different purposes. On the other hand, they show more willingness to pay for apartment plots than otherwise.

The capital variable, as specified by the amount of capital and/or loan capacity of the bidder/investor as registered during the auction, is shown to be positive and significant. This resembles to the general demand theory that income and demand are positively related except in the case of inferior goods. The result shows that bidders with higher capital tend to have more willingness to pay for auction land.

Our result also suggests a negative and significant coefficient for investment cost that the bidder is expected to incur when developing the auction plot. A higher cost means less profit and hence do not attract bidders, at least in the shorter run. The negative sign of the coefficient for investment cost variable shows that investors/ bidders are less willing to pay for auction land which incurs high investment cost.

The coefficient for the size of the auction plot is negative though highly insignificant. The negative sing suggest that as auction plot size increases investors tend to offer less for the plot. This can be that as plot size increases, total offer price will increase and hence make the bidder reluctant to pay more.

Moreover, the available auction price data on lease period, payment period and grace period of the auction plots each include only single/ constant value and could not be included in the model.

6. Summary and Conclusion

The spatial, physical and socio-economic condition of Addis Ababa City, in general, is by far behind the requirements fundamental to sustain the livelihood of the city. In addressing the problems, the suggested government intervention strategies include, among others, bringing balanced and coordinated investment/development in different parts of the city. Therefore, this study aims to assess determinants of investors' willingness to pay for a particular urban land in the city.

Data on the City's land auction between 1994/95 and 2002/03 is used to address the issue of investors' willingness to pay for urban investment land. Other relevant secondary data are also used as a source of information. We used ordinary least square (OLS) estimation to analyze investors' value on urban investment land to analyze investors' value on urban investment land. In addition to multivariate econometric analyses, we also used univariate and bivariate analytic methods to describe the data.

Accordingly, study findings indicated that investors' offer value (as measured by their markup price) for a particular urban land is positively affected by plot grade, investors' capital, accessibility to basic services and plot for apartment. Investment cost negatively affects investors' willingness to pay for particular urban land. Benchmark or floor price of the plot positively affects their markup value.

The study concludes that investment opportunities need be given to private investors since they are willing to invest and offer higher price given the investment land has access to basic social services, and priority is given for some investment sector. Overall, we are reserved to make further policy recommendation but we suggest that a more in depth study that

considers the socioeconomic characteristics of investors, policy factors and institutional

aspects of the land market in the city should be made in the future.

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Appendices

Table 1: Bench mark/ Floor price in Addis Ababa City

Grade	Floor Price (Per M^2)		
	C B D	**T R Z**	**S U R**
1	1297	796	273
2	1181	719	230
3	1018	622	167
4	835	525	147
5	688	427	-

Source: Addis Ababa City Government Bench Mark Price Map, 2002.

Table 2: Specification of the variables included in the OLS estimate

Variables	Specification
Markup price	This variable is defined as the amount investors/ bidders offered for a plot minus the floor price of the plot. This difference is considered in this analysis as the willingness to pay of the bidder/ investor for the auction plot.
Size of the auction plot	Auction plot size in M^2
Sector of Investment	DIND: 1 if plot is for industry and 0 if otherwise DDIF: 1 if plot is for different purpose and 0 if otherwise DAPP: 1 if plot is for apartment and 0 if otherwise
Access to basic Services	The bench mark land price map of A.A City labeled plots in the city in to five grades where Grade 1 plot is with batter development condition, and so on. Thus, access to basic services here is specified as: 1 if plots is Grade 1, 2 if Grade 2, 3 if Grade 3, 4 if Grade 4 and 5 if Grad 5

Table 2, *continued………*

Distance from the center	1 if the plot is with in the central business district (CBD), 2 if with in the zone of transition (TRZ) and 3 if within the suburban and urban-rural fringes (SUR).
Bench -mark price	The floor price of the plot at the time of the auction, as a measure of the value of the site
Capital	The amount of capital and/or loan capacity of the bidder as registered by the city government during the auction
Plot Grade (as per the Addis Ababa City Government plot grade criteria)	Plot grade as per the Addis Ababa City Government plot grade criteria: 1 if plot grade is II_3, 2 if III_1, 3 if III_2, 4 if III_3, 5 if IV_2 and 6 if IV_3
Investment cost	The amount of investment cost that the investor is expected to incur when developing the auction plot

Table 3: Description of land auctions in Addis Ababa City

Year	Auction No.	No. of plots available to auction	No. of Bidders	Bidders to plot ratio	Plot of land sold		Down payment (in Birr)	Yearly payment (in Birr)
					In No.	In M^2		
1994/5	1st -7th	95	NA*	-	NA	81,818	11,145,260	NA
1995/6	8th -11th	160	NA	-	17	52,532	5,948,980	6,115,025
1996/7	12th -15th	592	NA	-	47	546,366	46,718,240	1,520,321
1997/8	16th -20th	696	355	0.51	29	241,417	26.109,943	1,656,445
1998/9	21st -27th	822	471	0.57	42	230,175	22,469,797	9,421,000
1999/00	28th -32nd	2631	489	0.19	53	326,073	18,941,072	9,088,988
2000/01	33rd -37th	2311	987	0.43	52	135,547	24,010,524	12,873,390
2001/02	39th	41	419	10	91	117,947	18,364,567	7,181,952
2002/03	40th- 43rd	325	4551	14	48	152,646	337,896,541	7,559,578

Source: Adapted from Report of Land Administration Authority, November 2003.
*NA= Data not available.

Table 4: Mean auction land markup price by Investment sector

Investment Sector	% of Total Bidders	Auction Land Markup price (Birr per M^2)				
		Mean	Minimum	Maximum	Range	Std. Dev.
Industry	20.55	211.61	1.00	1171.12	1170.12	185.62
Different purposes	52.97	865.85	5.00	3020.00	3015.00	681.11
Apartment	25.42	563.46	33.00	2920.00	2887.00	427.12
Fuel station	1.06	359.67	3.00	753.36	750.36	339.04

Table 5: Mean auction land markup price by Plot Grade

Plot Grade	% of Total Bidders	Auction Land Markup price (Birr per M^2)				
		Mean	Minimum	Maximum	Range	Std. Dev.
II$_3$	5.51	934.13	3	2488	2485	808.41
III$_1$	6.57	341.95	71	1171.12	1100.12	249.92
III$_2$	47.46	911.21	5	3020	3015	690.90
III$_3$	18.64	213.06	1	944	943	174.72
IV$_2$	3.39	411.09	166.33	653	486.67	120.9
IV$_3$	18.43	483.63	33	1234.12	1201.12	231.83

Table 6: OLS regression estimation (Investors WTP for land)

Dependent variable: Investors Markup price for auction land				
Explanatory variables	Coefficient	t-statistics	Mean values	Standard deviation
Auction plot size	-0.039	-0.260	2221.67	1484.3638
Plot grade	0.455	1.679*	3.01	.7815
Dummy for industry plot	0.127	0.547	0.27	.4420
Dummy for apartment plot	0.232	2.065**	0.05	.2107
Dummy for plot for different purposes	0.312	1.292	0.68	.4691
Access to basic services	-0.441	-2.848***	2.31	.4637
Bench mark price	0.699	2.598***	242.7	108.3565
Bidders capital	0.085	1.842*	940353	4398079.0
Investment cost	-0.124	-1.719*	3474737	1923537.4
R squared = 0.274 Adjusted R squared = 0.256 F- value [10, 355] = 14.921		No. of observations = 366 Mean of dep. variable = 696.65 Stan. dev. of dep. variable = 668.52		

Note: Independent variables are defined in Section 5.3.3 of this paper.
  *** Significant at least at 1%   ** Significant at least at 5%   * Significant at least at 10%

Figure 1: Pattern in markup price, plot size and number of bidders
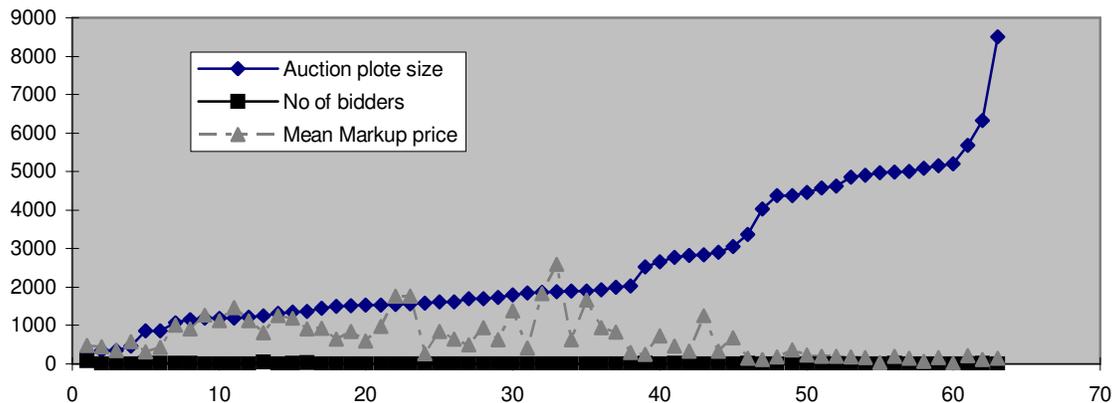
Notes

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[1] According to "Re-enactment of Urban lands Lease Proclamation N0.272/2002", lease means lease-hold system in which use right of urban land is transferred or hold contractually.

[2] Yuming and Stephen (2001) used a similar OLS Specification in their event study analysis to government land auctions in Hong Kong to detect economic profits that land developers are able to earn on their land acquisitions. They used OLS regression, among others, to regress abnormal returns of land developers against auction site characteristics.