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Assessment on Practice of Real Property Valuation for Collateral in Addis Ababa:

In the Case of Two Selected Private Commercial Banks

A thesis submitted to the school of graduate studies of Addis Ababa University, Ethiopian Institute of Architecture, Building Construction and City Development (EiABC), in partial fulfillment for Master's degree in Urban Land and Property Valuation.

By

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This thesis has been submitted to Addis Ababa University's Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) and partially meets the requirements for a Masters of Arts in Urban Land and property Valuation.

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Declaration

I declare that this thesis prepared for the partial fulfillment of the requirements for the degree of Master of Arts in Urban Land And Property Valuation entitled" Assessment on practice of real property valuation for collateral in Addis Ababa: In the Case of Two Selected Private Commercial Banks" is my original work and it has not been submitted by any other person for an award of a degree in any other university or institutions and that all sources of materials used for the thesis have been dully acknowledged.

Agernew Aseres Alene

Signature _____

Confirmation

I stated that Agernew Aseres Alene has carried out this research work on the topic entitled "Assessment on practice of real property valuation for collateral in Addis Ababa: In the Case of Two Selected Private Commercial Banks" under my supervision and it is sufficient for submission for the partial fulfilment for the award of master's degree in Urban Land and Property Valuation.

Teshome Tefera (Phd)

Signature _____

Acknowledgement

The secret behind my accomplishment is my Holy Trinity.

Agernew A.A

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Abbreviations and Acronyms

AD - After Birth of Christ

BC - Before Christ

BOQ -Bill of Quantity

CSA-Central Statistics Agency

CWC - Cost of Civil Work

EBA- Ethiopian Bankers' Association Manual

EMF- European Mortgage Federation

ETB - Ethiopian Birr

EVS- European Valuation Standards

FDRE-Federal Democratic Republic of Ethiopia

HABU-highest and best use

IFRS - International Financial Reporting Standards

IVSC - International Valuation Standard Committee

IVS - International Valuation Standard

LHC - Land Holding Certificate

MV-Market value

MLV-mortgage lending value

NBE - National Bank of Ethiopia

RICS - Royal Institute of Chartered Surveyors

TEGVA - The European Government Valuation Appraisal Agency

TIAVSC - The International Assets Valuation Standards Committee

UK - United Kingdom

US - United States

Abstract

The main aim of the study is to assess the existing practice of real property valuation for collateral in the case of commercial banks in Addis Ababa; and investigate if the practice is consistent among the banks and to check if the practices are compatible to the internationally accepted principles. In order to accomplish this objective, the real property valuation practice for collateral in banks was considered as a real-life context as existing phenomenon; thus, appropriate case study method is deployed to investigate the aforementioned valuation related matters in the selected banks in Addis Ababa. The case study method allowed the researcher to use a variety of data using multiple data collection mechanisms that facilitated the validation of data through triangulation. It also helped the researcher avoid bias and error of data. The study assessed the local and international guidelines related to real property valuation, manuals of selected banks and Ethiopian bankers association. And, it finally benchmarking practice of real property valuation on Ethiopian banks' guidelines is done based on the findings. The study revealed that each bank has its own valuation manual and procedures to do valuation. The amount of loan given to borrowers is not based on the market value of the property. In addition, the value of a property estimated by the banks doesn't predict the actual market price but on securing the bank from risk as much as possible to ensure the banks can get their money back in case of default. Thus, properties are compulsorily undervalued by the lending banks and restricts the borrowing potential of investors and firms. Almost all commercial banks employ cost method due to availability of relevant comparative cost data, the difficulty in updating rental rates of buildings, and lack of stability in the Ethiopian property market. The depreciated replacement cost method of building valuation and determination of land value of land use right are not also compatible to the generally accepted standards due absence of income and expense data of subject and comparable property. The study recommended the need to minimize variation of value; revisit the existing land property law; align the standards to the generally accepted practice; develop standardized valuation framework in banks, and it is also strongly recommended that valuators need to demonstrate appropriate academic/professional qualifications, and technical competence to improve the practice..

Key words: *real property, collateral, basis of valuation, valuation methods, location value*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Real property valuation is an art and a science of determining the most probable price of an interest or right in property encompassed in an ownership for a particular purpose at a particular point in time for different purposes (French, 2003). The concern in real property valuation is to estimate the property interests which can be defined by state or the law of individual jurisdictions and are often regulated by legislation. According to Tirsit (2018) in Addis Ababa, banks and mortgage institutions provide loans to real property developers and investors. Property investors develop property investment in real estate through secured lending where real property is taken as a collateral security (Aliyu, 2017). The valuation reliability and accuracy are therefore critically important for borrowers due it is a guarantee for accessing finance since credit is often provided based on the value of a property. On the other hand the major concern of banks here is how they will get their money back and this implies that the engagement between lenders and borrowers is accompanied by a certain level of risk (Karumba & Wafula, 2012). Due to this risk, borrowers assure the performance of their obligation by offering security on their property by charging the debt primarily on the property (Foote & Murphy, 2007). For the purpose, banks determine the degree by which the value of an asset exceeds the loan in providing the margin of asset cover and to increase the certainty that the asset being taken as a guarantee will cover losses in the case of loan default (Aliyu, 2017). Therefore, if valuation is accurate, borrowers would be encouraged to base their investment decision on the estimated value. In doing so, they often require the professional skills of valuers who will determine the value of property of the borrower to advise them on how much money that will be advanced as loan to such real estate developers or investors.

However, collateral of real property is strongly challenged by absence of uniform guidelines; because there is no national regulatory institution responsible for the profession (Tirsit, 2018). There is also overall lack of research regarding how best to manage the valuation inconsistency among lending banks in Ethiopia (Aseres et al., 2020). As a result, there is a possibility that banks exercise to suit their institutional interest, for instance by under-valuing a property. The non-uniformity and inconsistency of practices also leads to valuation debates (Adegoke, 2016). In order to recommend the appropriate framework there is a need in assessing the various collateral valuation practices that are currently employed by banks in the city. Therefore, this paper aims to assess the bases and approaches of real property valuation, consistency of property valuation methods among banks and the value variation between the assessed value by banks and the actual market value of the property. Based on the findings, appropriate valuation frameworks compatible to real property valuation for collateral will be suggested. To achieve this objective, a case study research method is used.

1.2 Statement of the Problem

This qualitative research assessed the real property valuation practices of banks during estimation of collateral properties. In Ethiopia, as the banking sector is at its growing stage, it has been facing various challenges due limited theoretical and empirical literature pertaining to mortgage and collateral valuation. In Addis Ababa, there is no valuation framework stating the valuation bases and methods. Banks try to adopt the working manual from Ethiopian bankers' association to use similar procedures of mortgage and/or collateral valuation. However, some banks often adopt cost method; at the same time others adopt both income and cost methods. The different methodology employed for a similar property and purpose of valuation incorporate different variables which in turn results significantly different value, hence one real property can be valued with significant amount of variation for the same purpose (Bilkisu, 2017). The asset under consideration will not be determined objectively and will become subjected. This would result in difficulty to reach on an acceptable consistent market price of the property. Thus, this often leads to customers' appeal if it is known that their property would have been valued in much greater amount in other institutions even though the purpose of valuation is the same.

Different studies indicated that Ethiopian banks are using mainly cost approaches of valuation during valuing a property for collateral purpose. The valuation results of collateral properties are also vary from bank to banks. They usually practice different guidelines for similar purpose of valuation and property. The appraisal made by lending banks is also plenty much less than the marketplace price in their property. The estimation of a property value in the banks need not consistency with actual market value in similar purpose. Thus, the need to have properties to be valued within the acceptable range of difference between the banks and international practice for the same purpose of valuation is necessary (Ermiyas, 2020). The predominant reasons for undervaluation and overvaluation are the valuation methods that the banks are currently practicing (Elizabeth, 2017). The existing method lacks specific adjustments on the price of property. It also neglects the difference between cost and value; namely that a property might be cheaper than another but generate a much higher income. So, the method will not reveal the potential of the collateral in the property market (James, 2015). The existing valuation practice gets difficulty to predict actual market price for a property is in its highest and best use of or not. As a result, the value of real property valuated by banks is debatable due to variation between their approach and market values. Therefore, this study is necessitating to discover and compare the valuation results of the selected banks in Addis Ababa and procedural consistency among the banks and the international practice. To fill the gaps in the practice there are studies conducted by other researchers in Ethiopia related to bank collateral valuation but all of them are focused on the assessment of the existing practice. However, this study is focusing on the comparison of the valuation results between banks and trying to check their consistency with international practices behind the

variation. Therefore, developing a guiding framework aligning to international practices is essential to provide reliable and accurate valuation. This is the main focus of the study in the banks.

1.3 Objective of Study

1.3.1 General Objective

The research generally aims to study the current practice of real property valuation for collateral in the case of commercial banks in Addis Ababa; and show how their practice is compatible to the internationally accepted principles.

1.3.2 Specific Objective

1. To assess the existing basis and methods of real property valuation practiced by commercial banks.
2. To check the consistency of real property valuation basis and methods in those banks.
3. To compare the values assessed by the banks with what price the market value offers using international valuation practice.

1.4 Research Question

The discussion above concerning the gaps of real property valuation basis and methods in banks results the following research questions:

1. What are the existing basis and methods of real property valuation for collateral purpose practiced by banks?
2. Which basis and methods of real property valuation consistent across the commercial banks during the determination of value of a real property?
3. What amount of variation does the value assessed by the banks vary from the price the market value offers based on international valuation practice?

1.5 Significance of the Study

As property investment is growing in Ethiopia, investors' demand of project finance for the purpose is increasing. Banks and mortgage institutions also provide loans to real property developers and investors. One of the issues during the process is prediction of monetary value of collaterals. So, This study used for assessing, evaluating, and solving most problems related to property valuation that would help in the realization of sustainable and institutionalized valuation systems. This study helps to incorporate international principles and approaches for collateral. Thus, this research is important for the study of the current real property valuation practices for collateral, hence calling for better valuation basis that can counter all the claims condemning the weaknesses of the valuation techniques currently practiced. The research results will make a further contribution to the existing level of knowledge and will close the information gap at banks in property valuation. It can be used by banks as an input to analyze their shortcomings. This study would integrate the existing phenomenon into

the process of updating bank instructions. In addition, it is hoped that the results of this research will encourage other academic researchers to undertake further research.

1.6 Scope of the Study

Geographically, the research is limited to the capital city of Ethiopia Addis Ababa. The head offices of all banks are located in the city. The engineering departments and most of experienced valuers are working at the head office and are largely practicing in the city. The city is organized by 11 sub cities (Bole, Yeka, Kolfe Keraniyo, Akaki Kality, Nefas Silk, Arada, Addis Ketema, Lideta, Kirkos, Gulelle, Lemi-Kura). All banks are undertaking property valuation in all sub cities.

Thematic wise, this study is limited to the practice of property valuation and the techniques adopted by two banks; both are non-governmental banks (Awash bank, Dashen bank) at their headquarters found in Addis Ababa. The study will also conduct property valuation by those banks by taking five selected buildings found in the capital city (one residential villa, one commercial, one condominium flat, one warehouse and one fuel station) buildings. The study is as well intended to check the consistency of valuation basis and methods across these banks and compare value variance estimated by banks and compare banks' results with the actual market value based on international practice. **Temporally,** the cross-sectional primary will be collecting on May 2022 to inquiries of the information.

1.7 Limitation of the Study

The study undertaken was not easy as it needs high level of information confidentiality. Particularly, it was difficult to get relevant data to be used as input to the study. It was also difficult to find written literatures in related with the practices of valuation in Ethiopian context. Inadequacy of the practicing firms on property valuation, lack of specialized professionals in the particular area to get further interview, lack of produced property valuation results and reports, time constraint in preparing the study is also among the limitations of the study. Thus, the aim of the study was limited in assessing the particular methods and basis of the lending banks and reviewing the existing manuals of the banks referenced to the generally accepted methods of property valuation.

1.8 Description of the Study Area

Addis Ababa, the capital of Ethiopia, was founded in 1886 by Emperor Menelik II. As the capital of Ethiopia and one of the largest cities on the African continent, Ethiopia is home to millions of people of diverse backgrounds and occupations. It is an important transportation, logistics and trade center. The city is home to numerous international companies and organizations. As such, it plays an important role in the international business world as the best place for investment, starting and developing private businesses, starting companies and ventures of all kinds. The population is expected to grow rapidly in the near future. The estimated annual population growth rate in recent years is 3.8% (CSA, 2007). Job opportunities, clean drinking water, sanitation facilities and plenty of shops and

stores ensure that the capital will continue to grow in the future. Most of Ethiopia's service companies are also established in the city. Most of Ethiopia's import and export trade passes through Addis Ababa. According to the Ethiopian Central Statistics Agency's Population Projection Report, Addis Ababa had an estimated population of 3,434,000 million in 2007, or about 18% of the country's urban population (CSA, 2013). The estimated area is 54,000 hectares. Job opportunities, clean drinking water and sanitation facilities, and numerous shops and shops ensure the capital will continue to grow well into the future.

In order to investigate the study, Addis Ababa city is selected purposely with the following rationales. This is because the engineering service of banks are located in head offices of the banks and located in Addis Ababa. Moreover, its geographic location, combined with its political and socio-economic status have made it a melting pot to hundreds of thousands of people coming from all corners of the country in search of employment opportunities and services. This increased demand of housing mortgage and project finance of property investment in the city. As a result, the financial lending institutions reinvent their services tremendously. First, there is high demand to access money from financial institutions. Secondly, data can be easily accessed and collected. Thirdly, the city is endowed with natural resources; so many investors are interested to engage into manufacturing and real estate investment sector. In support of this, banks play significantly to raise funds for the investors; lastly, the banks are not still aware of how they can to compute collateral valuation practices such as the mortgaged lending value. For this study the cases are Awash international bank which was established as the first private commercial bank (post 1991) on November 10, 1994 by 486 founder shareholders. The bank has over 10,000 staff strength; and over 457 branches (Awash Bank, 2021). And Dashen bank which was established in January 1996. The bank has a total number of 442 branches and over 6,422 permanent employees (Dashen Bank, 2020).

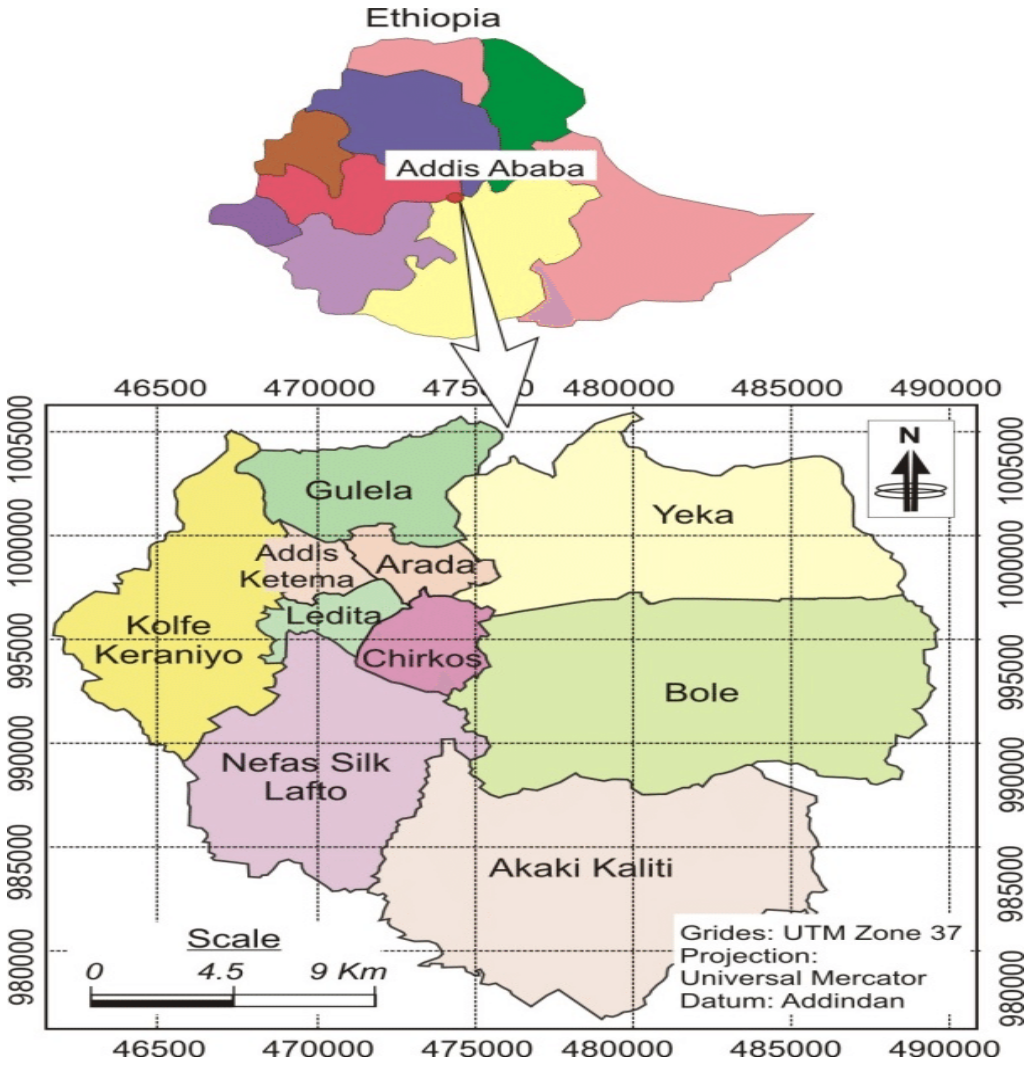


Figure 1 Location Map of the Study Area

1.9 Ethical Considerations

The procedures undertaken in this research has been conducted in a manner that is consistent with ethical issues that need to be considered in conducting research. The name of banks and professionals participated are recorded confidentially. The respondent is not informed about the other bank under study except the bank, in which he/she is working now. The result of this survey is intended to serve only for academic purposes.

1.10 Organizations of the Document

The study is organized in such a way that **the first part** constitutes preliminary pages include a title page, signed approval sheet, declaration, confirmation, acknowledgement, table of contents, list of tables, list of figures, list of appendices, list of abbreviations, acronyms and abstract of the paper. **The second part** introduces the overall nature of the research and explained why the study is important such as introduction part including background of the study, problem statement, research objective, research questions, scope of the study, limitation of the study, significance of the study and

organization of the paper. **The third part** describes the second chapter or literature review includes the brief description of the conceptual backgrounds and empirical reviews on Ethiopian case particularly legal frameworks currently practiced, valuation basis, methods and techniques used in financial institutions; practical reviews of others researchers' work in the topic and existing gaps of the profession. **The fourth part** describes the third chapter or the methodology of study including research approach, data sources and method of data collection, selection of cases(method of sampling) and method of analysis. **The fifth part** describes fourth chapter or findings and discussions. It is detail explanation, analysis and presentations of findings of the study based on the research questions. **The sixth part** is the fifth chapter which includes the conclusions and recommendations. **The seventh part** is the end part of the paper includes the references used and annexes attached.

CHAPTER TWO

LITERATURE REVIEW

Conceptual Review

2.1 Introduction

The concept of property and property valuation has many dimensions and is usually not readily definable. A real estate appraisal is an estimation of property rights, which may be defined by a state or individual jurisdiction and is often regulated by law. It is widely used in financial and other markets to support private or public sector decision-making in the areas of financial reporting, taxation, compulsory acquisition, trade, loan collateral, or other regulatory purposes (TEGoVA, 2016; Adair et al., 2003; IVSC, 2017). As property valuation is becoming the basis for collateral credit decisions, financial reporting of multinational companies across border property investment, securitization of real estate and the like, there is an increase for valuation requesting which enhanced a great competition between lending banks. According to the international standards of the practice for a valuation to be considered accurate, it must reflect all important real estate market fundamentals, and since the valuation is intended to serve as a reliable indicator of the price of the real estate transaction, market participants should be able to rely on it (Scarretta, 2008). Therefore, the practice should be supported by an appropriate basis of valuation; and methods are determined based on the type of property being valued and instructions of clients such as a bank. The basis and methods of the practices must be based on the generally accepted practice (Appraisal Institute, 2013).

In Ethiopia the imperfect and infancy of property market development influence the valuation practice. The valuation practices usually are divergent due absence of standards and guidelines regulated by legal frameworks. The country has not reformed the regulation regarding to property valuation yet. Only commercial banks tried to establish an association called Ethiopian bankers association which regulates the member banks in the practice (EBA, 2015). However, due to lack of a legal framework in valuation, it couldn't implement the practice compatible to the generally accepted standards. The association tried to develop a manual to guide how banks can employ consistent basis and methods of property valuation during collateral. However, its basis and methods are not compatible to the generally accepted standards of Royal institute of chartered surveyors.

2.2 Concepts of Property

Property is a legal concept that encompasses all interests, rights and benefits associated with property that consist of property rights and give the owner one or more specific rights over the owned object. The combination of property rights is defined in some countries as a set of rights that includes the right to use, sell, rent, give, pledge, or choose to exercise all or none of these rights (Alemayehu, 2009). Other scholars define property as the rules governing people's access to tangible assets

(tangible assets) such as land, natural resources, and manufactured goods, and to intangible assets (intangible assets) such as inventions, contractual rights, and financial assets, resources and control them (Degualem, 2018). According to Elizabet (2017), property is a set of things or rights to things whose possession is protected by law. Properties can be personal or real. Personal property is the ownership of interests in things other than real estate (Appraisal institute, 2013). It includes all tangible and intangible interests not defined as immovable property; which are not permanently connected to immovable property and which are usually characterized by consumables (movable property). According to Appraisal Institute (2013) personal property we generally mean any other moveable property or thing that is not part of the property; which can be divided into tangible and intangible.

2.3 Concepts of Real Property

Real property can be defined differently. It is all rights, interests and benefits related to the ownership of real estate including a right of ownership, control, use or occupation of real estate which is legally recorded by legal procedures in a formal document namely a title deed or lease (Alemayehu, 2009). While, real property is the physical part including all things that are a natural part of the land and all permanent attachments, mechanical and electrical plant providing services to a building that are both below and above the ground (IVSC, 2003). According to Alemayehu (2009) real property is a legal concept distinct from real estate, that encompasses all the rights, interests, and benefits related to the ownership of real estate The civil code of Ethiopia under article 1130 classify land and buildings under immovable properties excluding special purpose properties like heritages, churches, mosques and the like (Empire of Ethiopia, 1960).

2.4 The Concept of Property Right

In its broadest sense, property refers to anything that has material or moral value to human beings, starting with one's body, reputation, and freedom of thought and action. In the strictest and proper legal sense, property can be defined as the exclusive right to control, use, transfer and all those who might unlawfully take possession of an object or thing of economic importance and its fruits, of the use and to exclude the enjoyment of it (Empire of Ethiopia, 1960). Thus, refers to the rights and duties, privileges, and limitations that govern people's relationships in relation to things of economic or financial (Alemayehu, 2009). In Ethiopia context, consistent with the FDRE Constitution (1995), Art. 40/1/, which guarantees the right to property, provides that unless the law limits it to public purposes, is the right to buy things of value, to use them and transfer. The right to property thus imposes on everyone else the obligation to refrain from any act of interference in the use and enjoyment of the thing which he owns or possesses.

2.4.1 Real estate valuation concepts

The concept of valuation varies from country to country due to that countries have their own independent economic, social and financial policies. Scholars tried to define the valuation as the art or science of estimating the present value of a specific objective of a specific real estate interest at a specific point in time, taking into account all the fundamental economic factors in the market, including the size and measure of alternative investments in the process (Millington, 2006). Other scholars probably define it as the art and science of determining the most likely price of a stock or property held for a specific purpose at a specific point in time (French, 2003). Others define real property valuation as a means of estimating the present value of income from real estate investments (David Isaac, 2002). According to Marston (1970), quoted by Binyam (2017), real estate appraisal has also been defined as the art of assessing a long-term monetary measure of the desirability of owning a specific property for a specific purpose. The focus of this process is therefore on the assessment of property interests, which may be determined by state law or individual jurisdiction and are often regulated by law. It is widely used in financial and other markets to help private or public institutions make decisions in the process of financial reporting, taxation, forced acquisition and purchase (Tirsit, 2018).

2.4.2 Basic Terms in Property Valuation

Depreciation: The term depreciation is used both in in valuation and in accounting, but still leads to confusion usually misleads property appraisers and accountants; to avoid such misunderstanding, property experts such as valuers may use either the term depreciation or the term accrued depreciation in reproduction or replacement cost methods to refer to any loss in value from the estimate of total cost new (RICS, 2012).

Replication Cost (reproduction cost): This is the cost of creating a virtual replica of an existing structure using the same design and similar building materials. This method estimates the cost of a new building as if looking at plans for an exact replica of the current building (RICS, 2012).

Investment value: The value of an asset to a particular owner or prospective owner for individual investment or operational objectives (American Society of Appraisers, 2012).

Replacement Cost New: Treats the building as if it had been rebuilt using modern methods, designs, and materials that would best replace the appraised building use, but provide the same benefit. The current cost of replacing an asset with its modern equivalent, minus deductions for physical deterioration and significant obsolescence and optimization (Appraisal Institute, 2013).

Market Value: the estimated consideration for which an asset or liability would be exchanged at the Valuation Date between a willing buyer and a willing seller in an arm's length transaction, after reasonable negotiation by each party knowingly, carefully and without coercion. It imposes on the market the general business concept and motivation of many participants, rather than the preconceived notions or self-interest of any particular person (IVSC, 2005).

Price: is a term used to describe the amount requested, offered, or paid for a good or service. It is an indication of relative value, i.e., the amount being asked, offered or paid for the object (IVSC, 2005). It is the intersection of supply and demand.

Cost: is a production-related concept, distinct from an exchange, which is defined as the amount of money required to create or produce a commodity, good, or service. Price is related to cost because the price paid for an asset becomes its cost to the buyer (RICS, 2017).

Value: not a fact, but an estimate of the likely price of goods and services over a period of time according to a specific definition of value. Ownership value is an estimate of the benefits that a particular party would derive from the property (RICS, 2012).

Mortgage Lending Value: The value of the property as determined by appraisers carefully assessing the future market value of the property taking into account the long-term sustainable aspects of the property, normal and local market conditions and current and reasonable alternative uses of the property (Sven & Wolfgang, 2007).

2.4.3 Purpose of Real Property Valuations

Along with the development of market economy and property market, the range of purposes for which property valuation is necessary has been increasing, most predominantly resulted from political, social, economic, or financial background. A sound working knowledge of valuation principles and procedures is essential in all kinds of decisions for example relating to the acquisition, sale, funding, growth, management, holding, leasing, trading of real estate, and in ever more relevant matters involving income tax considerations (Pornchokchai, 2006; Maria, 2010). Appraisal is also important for lenders, borrowers and real estate agents, as it helps to assess the value of the property, determine the risk and determine the amount of the loan given by the lender (Binyam, 2017). Appraisals also help to determine the market value of the property so that the lender can ensure that the loan amount does not exceed the market value of the property, which reduces the likelihood of the lender incurring a loss in the event of default on the loan (RICS, 2012). Others argued that appraisal helps the borrower determine the loan amount and loan terms (Ermias, 2020). In addition, valuation helps investors decide whether investing in a particular asset is worth their money or not.

2.5 Responsibility for valuation and Degree of Accuracy

2.5.1 Expectations from the valuer

Valuation must reflect all important real estate market fundamentals and serve as a reliable indicator of the real estate transaction price, on which market participants generally rely. However, it is important to remember that the appraiser has no way of finding an accurate estimate of value; does not lead to true value as all valuations are influenced by factors attributed to the property being valued; specific to the property and external to the property (Binyam, 2017). According to Stasiak E. (2013) the direction and magnitude of pricing error is directly proportional to who is paying the

customer and how much they are paying; That aforementioned it doesn't provide an exact estimate because there aren't any exact estimates. So the task is to know how much and in which direction the property will trade, which is a satisfaction function that can be derived from the property. According to Chukwuemeka and Osmond (2014) appraisers should consider several factors to ensure an accurate property valuation, such as the location of the property, the condition of the property, the market value of similar properties in the area, potential rental income, capital appreciation issues, and the environment, regulations, availability of infrastructure and services, construction quality and the possibility of further development. The appraiser should also consider the property's vulnerability to natural disasters, political or economic instability, or other factors that may affect the property's value (Binyam, 2017). Appraisers should also conduct a thorough inspection of the property, including a detailed assessment of the condition of the building, its structures and features (Rita, 2013). In addition, appraisers should research the local market and compare the property's value to similar properties in the area to provide an accurate estimate of market value. They should also consider local zoning and building codes, which may affect the value of the property, as well as usage restrictions (Ermias, 2020).

2.5.2 The real property appraisal profession and the role of the appraiser

At present, the international valuation Standards Committee adheres to the principle that the valuator is a professional who has a proven record of years of knowledge and accepted scientific and other methods and procedures, significant public service needs, generally accepted ethical principles, and potential harm to individuals and the society as a whole due to incompetence, misunderstanding, fraud or wrongdoing (RICS, 2012). According to Tirsit (2018), there are three main reasons why appraisers are hired for their professional skills: first, the real estate market is imperfect: supply and demand change frequently and vary by location and ownership and transaction information is always limited; Second, each property and its benefits are usually unique, or at least never exactly the same as other property and third legislation - the complex and interrelated laws that govern the country are constantly changing. Therefore, only an expert who knows them well and needs constant updating can understand them sufficiently.

2.5.3 Professional qualifications required of property valuers

Before appraisers can make a valuation, they need to know exactly what kind of value they are looking for, for whom they are finding it, and for what purpose that valuation is sought. Without this knowledge, the resulting number is meaningless and can be taken out of context and misinterpreted (Blackledge, 2009). To this end, it is recommended that property valuers have and be proficient in a wide range of skills such as: communication, calculation, measurement, preparation of reports, negotiations, construction knowledge, ownership of rights (Appraisal institute, 2001). In addition, the appraiser must have a very good working knowledge of the relevant legislation in order to be able to provide the required appraisals, as the main task is, by definition, to determine the value of the

property (Appraisal Institute, 2001). According to RICS (2012), if a person is sufficiently qualified to assume the responsibilities of a qualified valuer, the following criteria must be met, including relevant academic/professional qualifications demonstrating technical competence; membership in a professional organization committed to ethical standards; up-to-date and sufficient local, national and international knowledge of the type of assets and their specific market and the skills and understanding required to competently carry out the valuation; Compliance with any national or state law governing the right to conduct reviews; and ; where applicable, compliance with RICS inspector registration requirements; practical experience as a real estate appraiser and should be licensed or licensed in some states to conduct certain valuations.

2.5.4 Professional and Ethical Standards

Property valuation is understood not only as uncertainty of a single valuation, but also as a discrepancy between multiple valuations of the same property carried out at the same time and for the same purpose. Similarly, in the country where organizational rules are not strictly enforced; the value report of a property will come under inaccurate results although on a similar property for similar purpose (Yasin, 2019; Stasiak E., 2013). This usually arise from the professional incompetency and personal behaviors of valuators. Because unethical conduct leads to discrepancies in valuation value, lost investor confidence and the potential loss of investment in real estate (IVSC, 2017). On the other hand, where professionals are highly regulated, appraisers are less likely to misreport due organization rules are strictly enforced violations of the ethics should be punished (Layne, 2002). Investors are especially concerned for business ethics because of the positive effect on financial performance (Karumba & Wafula, 2012). However, measurement of value will vary from valuer to valuer although the procedures are undertaken in the same way (Myers, 2010). This is sometimes when an unethical valuer will change the reported value beyond the original range of defensible values even if the client has not influenced the property's value; instead of one that is impartial, objective and independent (Amidu & Aluko, 2007). To be considered as professional in the process, the professional valuer must assess uncertainty and offer the client what they feel is their best price estimate. The valuers must consider the client's appropriate needs and recognize the importance of the valuation, and the factors that impact the valuation (EMF, 2017).

2.6 Basis of Valuation

Basis of valuation is a fundamental assumption on which the declared value of the property is dictated for a particular valuation assignment. According to Asres et al. (2020) valuation basis describes the key assumptions on which the declared value is based; and indicates the probable price of the property on the open market, such as the nature of the hypothetical transaction, the relationship and motives of the parties, and the extent to which the property is exposed to the market. It also influences or determines the valuer's choice of methods, inputs and assumptions, and final value judgement. However, the appropriate choice of valuation basis depends on the purpose of the

valuation. Therefore, an assessment for any purpose should be supported by a recognized assessment basis (Asres et al., 2020).

Market value: According to the European Mortgage Federation (2017), market value is defined as the estimated price at which a property could be exchanged between a willing buyer and a willing seller on the valuation date, on arm's length terms and conditions, after appropriate advertising and by the parties knowingly and reasonably acting, free from any constraints. In most cases, it serves as the basis for assessing the mortgage and/or guarantee (Asres et al., 2020). For argument of accuracy the market value determined by real estate advisors should not be interpreted as the price of the property, but merely as an estimate of the market value. However, it has its disadvantages in certain circumstances that make it difficult to claim unique or complex properties in narrow markets (Lind, 1998).

Mortgage Lending Value(MLV): According to Bienert & Brunauer(2007) cited by Asres & Alemu(2020) mortgage lending value is the value of immovable property as determined With the useful resource of using a prudent assessment of the future marketability of the assets thinking about long-term sustainable elements of the assets, the regular and localmarket conditions, the current use and alternative appropriate uses of the property based on sustainability, avoidance of any speculation, traceability, standardization and marketability. So, it considers the destiny price of the mortgaged assets which may be carried out via the whole length of the loan.In stable markets mortgage lending rate and market rate are not different (TEGoVA, 2016).However, in volatile markets there's a substantial distinction among the 2 bases specifically at some point of times of financial crisis.MV is going hand-in-hand with improved financial institution lending and inflated assets prices (Crosby & Hughes,2011), whilst MLV presents sustainable fee for an extended duration of time (TEGoVA, 2016).

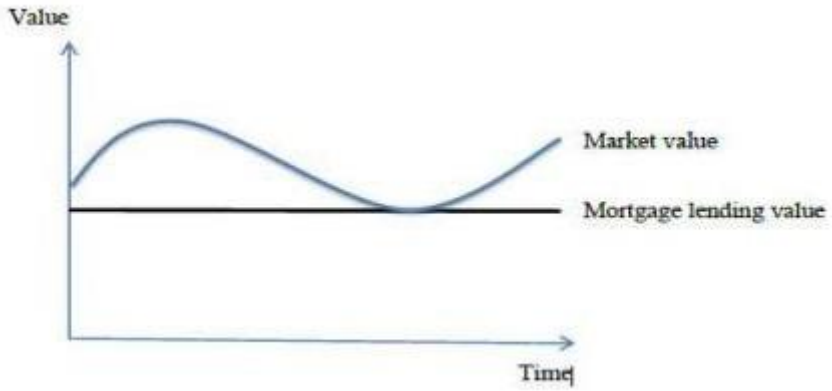


Figure 2: MV and MLV in Times of Economic Crisis

Worth (or investment value): measures the benefits that the intended entity generates by holding assets that do not necessarily involve a hypothetical exchange (Ermias, 2020). This is the highest price that a single well-known bidder would bid based on their specific investment needs, but does

not measure the overall market valuation of the property (TEGoVA, 2016). It differs from market value because market value is impersonal and detached from the individual investor.

Market Rent (MR): is **t**he estimated sum for which a property or space inside a property ought to lease or let to be leased on the date of valuation between a willing lessor and a willing tenant on appropriate rent terms in an arm's-length exchange after appropriate promoting wherein the parties had acted proficiently, judiciously and without compulsion (IVSC, 2017).

Fair value: according to IVSC (2017) fair value is a price that is fair between two parties acting at arm's length for the exchange of an asset. Similarly, fair value measures the estimated amount like market value but the parties in fair value may be unconnected and negotiating at arm's length, the asset is not necessarily exposed in the wider market and the price agreed may be one that reflects the specific advantages or disadvantages of ownership to the parties involved rather than the market at large (TEGoVA, 2016; RICS, 2012).

Special Values: refers to amounts that reflect specific characteristics of an asset that are of value only to specific buyers (Ermias (2020). A specific buyer is a particular buyer for whom a particular asset has a specific value due to the benefit obtained from ownership that is not available to other buyers in the market. A special value exists when an asset has characteristics that are more attractive to a special buyer than to all other buyers in the market (IVS Council, 2011). These characteristics can include physical, geographical, economic, or legal characteristics of the asset.

Synergy value: according to the IVS Council (2011), synergistic value is an element of added value created by the sum of two or more assets or interests, the combined price of which is greater than the sum of their individual values. This is an example of unique value when synergies are only available to certain buyers.

2.7 Highest and Best Use

Market value implicitly takes into account Highest Use and Best Use, commonly understood as the most reasonable or likely use of an asset. Any use of the property that is Physically feasible (i.e., technically feasible), financially sustainable, legally permissible (or urban planning permissible) and economically viable (highest return performance) and the use of the asset that yields the maximum value of the asset is evaluated (IVSC, 2005). In this concept, not only the property's current use but also the potential value of alternative uses should be taken into account in the valuation. Presumably, higher rents, and therefore higher selling prices for properties, could be achieved through conversion. If the realized capital gains are greater than the conversion costs, the market value of the property does not reflect the value of the property in its current state, but rather the value resulting from the first-floor conversion. Anyone willing to pursue such a strategy can make the best suggestions.

The Appraisal Institute (2001) offers four tests that appraisers can use to narrow down all alternatives for the best use of real estate:

Physically *possible:* This means that topography, soil type and composition, plot size and shape, surface and ground water and even weather conditions must allow development.

Legally acceptable: Intended use must comply with building regulations. The proposed use must comply with all applicable building codes and height restrictions. In addition, upgrades must meet all easement restrictions. However, the policies alternate over time. When building in a neighborhood with restrictive contracts, proposed improvements must not violate any rules. Land designated for residential development can be converted into commercial development. In such cases, the valuer should consider the likelihood that legal limits will be changed to accommodate the proposed development.

Financially Feasible: Appraisers should collect data to forecast construction and development costs, operating costs, rents, absorption rates, vacancy rates, discount rates, capitalization rates, and residual values. After gathering all this information, they estimate the pro forma net operating income for the intended holding period. Using discounted cash flow techniques, the professional can determine which projects meet their specific investment standards.

Maximum Productivity: Proposed uses must prioritize investment requirements and rank them by value or return. When prioritizing proposed uses, it is also helpful to consider the risks associated with the proposed use.

2.8 Property Valuation Approach

Introduction

Valuation approaches refer to a generally accepted analytical methodologies that are in common use. But the valuation approach may well be inappropriate for different interests and different property types with different purposes, over time. There are three internationally recognized methods of real estate valuation and they are all based on the economic principles of price equilibrium (Aseres, et al., 2020). The most commonly practiced are market, income and cost approach. The market approach assumes that property value is based on the views of a typical buyer and seller of the property (Miller and Geltner, 2004). It is based on comparing the item with other similar or similar assets for which price information is available (Parker, 2016). The income approach assumes that property value is based on the return requirements, current financing options and property risks of a typical investor (Miller and Geltner, 2004). The income method determines the value of an asset in relation to the value of income, cash flow or savings generated by the asset. Income capitalization considers the net income that the property could generate, usually in the form of rent, and that income is capitalized using an appropriate rate of return or discounting the projected cash flow at an appropriate target rate. Conversely, the cost approach assumes the value of the property is inherent in the cost to create the property based on land acquisition and building cost less wear and tear and depreciation (Miller & Geltner, 2004). Therefore, the value of the property in this approach is determined by considering the market value of the site and the improvements separately and then adding them (Adetiloye & Eke,

2014). Theoretically, all the three approaches may be used for developing and supporting an indication of value for collateral purposes. However, the replacement cost approach is largely considered to be unsuitable for collateral since loan is an investment in the market and the method lacks the capacity to reflect the fundamentals of investment uncertainty for mortgages (Aluko, 2007). However, it can be used when there is no comparable property transaction in the market or when it is difficult to get definite income for the subject property. According to Mooya (2016) the replacement cost method is suitable to value specialized properties that have insufficient evidence to use the two approaches. The cost approach is mostly used as a check on the reasonableness of the value determined using another valuation approach (Aseres, et al., 2020). However, in using the cost approach, the valuer should have a good knowledge of construction costs or unit rates of construction (Onyejiaka et al., 2015). A brief description of the three internationally recognized methods of property valuation will be provided as follow;

2.8.1 The Sales Comparison Method

The economic rationale of the sales comparison method is that a knowledgeable and prudent person would not pay more for a property than other persons have recently paid for comparable properties given that the general market conditions are the same. The property to be valued is compared to others on the market now or that have recently been sold or let on the market (Degualem, 2018). According to Millington (2000) adjustments are then made to allow for the advantages and disadvantages of the subject property in relation to each similar to arrive at a figure that can be considered the recent market price of the subject. The three main requirements of property comparable are: 1) similar property type to the subject; 2) similar location to the subject; and 3) evidence obtained is recent and reflects current market conditions. Each property is unique, and allowances must be made for the differences between the property being valued and the ones used for comparison, to take into account the various advantages and disadvantages of each. Typically, a mixture of qualitative and quantitative strategies might be employed.

According to Appraisal Institute (2001) and Wyatt (2007) procedurally the comparison method involves the following steps: Collect evidence of transactions and eliminate those not conducted at arm's length (for example, between parent and subsidiary companies); Determine which transactions are suitable for adjustment having regard to their comparability with the subject property; The geographic extent from which a comparable can be selected depends on the type of property and the state of the market; Comparable yet to transact or beyond a suitable time-frame should be used with caution; Select the elements of comparison; Compare the transactions based on these elements, and make adjustments where necessary; reconcile comparison elements to provide an indication of value for the trouble property (taking care to make sure that any modifications made to the same evidence mirror the in all likelihood reactions of market Wyatt (2007) formulated the equation below as the general procedure employed on sale comparison method:

$SALES\ PRICE\ OF\ COMPARABLE\ PROPERTY \pm ADJUSTMENTS =$ INDICATED VALUE OF SUBJECT PROPERTY…… Equation 1

However, the more specialized the type of property, the less likely it is that an appraiser will be able to find a comparable property, and it is not uncommon for evidence of sales of comparable properties to be inadequate (Appraisal Institute, 2001; Millington, 2000). Millington (2000) another weakness of the sales comparison is that the purchaser of the comparable property may have special reasons and specific personal situations which each precipitated and enabled the acquisition to be made, such motives and situations being absolutely inappropriate to others withinside the marketplace place. The other problem with the sales comparison approach lies in the fact that income properties are not frequently traded, so the available sample becomes so small that it is very difficult to apply that method. The economic rationale for the income approach to subject property is that no investor will pay more for real estate than he or she can earn by owning it. In addition, it is not easy to compare the income variables (rent, rental space, tax inside and outside, etc.) of each property with the comparable properties.

2.8.2 **The Income Method**

The income methods are usually applied to properties that are capable of generating rental income and are most likely to be purchased by investors. The Income Approach consists of methods, techniques and mathematical procedures used by assessors to analyze an asset's ability to generate income (Appraisal Institute, 2001; Millington, 2000). According to Maria (2010), cited in Degualem (2018), it is based on the assumption that potential buyers will pay no more for the subject property than an equally desirable substitute investment that offers the same return and risk as the subject property. Therefore, the income approach is primarily used to calculate the market value of properties that generate or have the potential to generate income. It considers the subject property as an investment and its value is on the rent it will produce for the owner with the anticipation of future benefits. This approach provides a measure of value by converting future cash flows into a single current net present value (RICS, 2012). The price paid by the buyer is determined by the income the property may generate from its investment. In this case, a property valuer assumes that the investor ultimately seeks a total return greater than or equal to the amount invested (Hungria-Garcia, 2004). According to Maria (2010), Fischer (2002) and Degualem (2018) the procedure in carrying out the valuation of commercial property using income valuation method is stated as follows:

Estimating Potential Gross Property Income (PGI): This is the highest potential income from all sources. This is the expected future earnings. In many cases direct or current income can be an indicator of future income. However, it is a mistake to rely solely on past earnings. Income includes both rental and non-rental income (if there is any). The non-rental profits consists of for example, profits from hoardings located on the buildings, mobile communications gadgets positioned at the roofs, or different transmitting gadgets, parking area costs etc. While calculating the capacity profits,

the valuer makes an assumption that the complete location of a assets generates maximal profits over a year.

Estimating vacancies and collection losses: It is the expected reduction caused by vacancy and collection loss. In economy, the income received by the owner (so called effective gross income) is rarely equal to potential gross income. The amount of lost profit (income) may vary and depends on the vacancy rate and collection losses (rent arrears or lack of payment), the overall economic situation, condition of local market, property type, and opportunity cost.

Estimating effective gross income (EGI): It is the difference between potential gross income and losses due to vacancy rate and tenants' negligence.

Effective gross income (EGI) = Potential gross income (PGI)- Vacancies/bad debts (Vac)

Estimating the operating expense rate (OE): the operating expenses (all expenditures necessary to produce income) are to be deducted from the effective gross income to find the net operating income expected from the property. They are generally classified as: fixed expenses and Variable expenses.

Estimating net operating income (NOI): This is a company's effective gross income (EGI) less operating expenses (OE).

The technique of calculating net operating return withinside the investment technique includes the steps depicted on the diagram below: Net operating income (NOI)= effective gross income (EGI)- operating expenses (OE). Then, determine capitalization rate (cap rate) = Net Operating Income / Purchase Price.

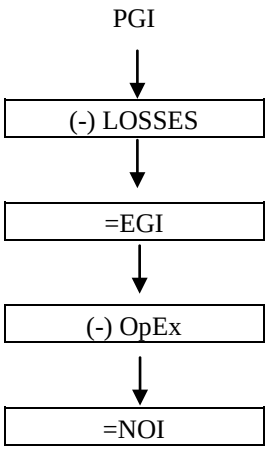


Figure 3: Process of calculating net operating income

Capitalization is a single-period pricing model that converts earnings stream into value by dividing net operating income, or earnings stream, by growth-adjusted return. The Cap Rate (Cap Rate) can be determined by looking at other similar properties in the area that have recently been sold. The net operating income and purchase price used to determine the cap rate also come from other nearby properties that were recently sold. In addition, requires an adjustment for risk associated with volatility of investment returns. The general capitalization technique assumes that the future cash flows of the business are stabilized and therefore only the expected first period net operating income is capitalized

at present value. Finally, the net operating income of the asset being valued and the discount rate of the other assets are used to determine the market value of the asset in query (subject property).

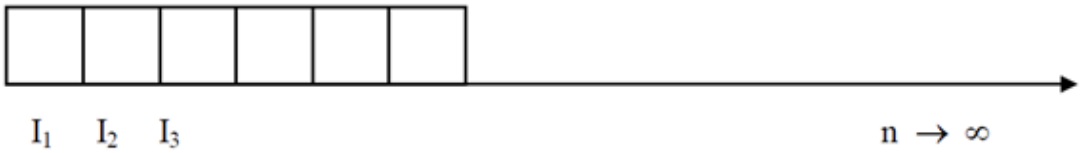


Figure 4: Direct Capitalization Model

Adopted from: Maria (2010)

Where;

D1=D2=D3=… = Dn

Capitalize the NOI into an estimate of current value: as Market Value = Net Operating Income / Capitalization rate (%). The net operating income of the property is taken from one of the expected incomes in the coming years (mostly the second year) in the operation period, not the previous income.

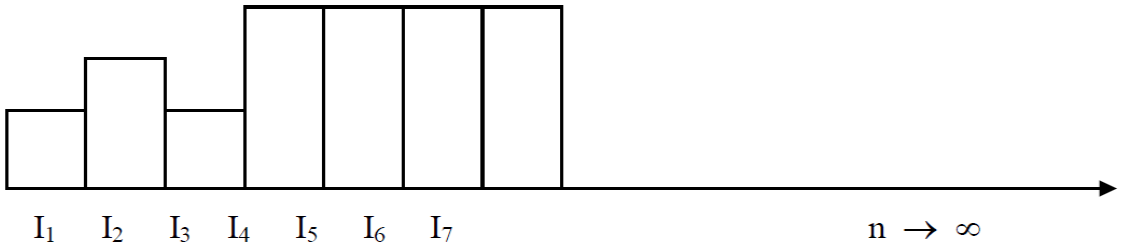
$V_o = \frac{NOI}{R_o}$ or

MV = I x Cf ……. Equation 2

Cf-capitalization factor, V_o denotes real estate market value at present state, NOI is the first-year net operating income of an income-producing property and Ro is overall capitalization rate. Capitalization rate will be used to convert anticipated economic benefits of a single period into value. The single period capitalization method can be appropriate, if reference to both historic performance and forecasts are not available (Maria, 2010). Beginning free market economy

2.8.2.1 Discounted cash-flow technique

The discounted cash flow method discounts cash flows over several periods to their present value. In other words, cash flow projections are typically in the 5–10-year range, and any other cash flows that occur after the forecast period are capitalized and added to the most recent year's projected cash flows. According to Maria (2005), if the income generated by the property is variable (due to pre-planned activities or contracts entered into for the property), the discounted cash flow method is used to calculate the market value. For discounted cash flows, the residual value is the value of the asset after the forecast period, and the discount rate is the rate of return used to convert future cash flows into present value (Kask, 2005). This method differs from the capitalization method in that there are two calculation periods instead of one.



$$MV = I_n \times \frac{1}{(1+r)^n} + RV \times \frac{1}{(1+r)^n}$$

Figure 5: Discount Cash Flow Model

Adopted from: Maria (2010)

Where, *In* is income in the consecutive years of the forecast period, *r* is the overall discount rate, *n* is the length of the consecutive projection period, *RV* is residual value and *MV* is the terminal value or expected market value of real estate at the end of the projection period.

The discount cash flow method is popularly used in West Africa, Australia and Europe. According to Binyam (2017) the discounted cash flow method is the most used valuation method by valuators in various West African countries, particularly in the Nigerian market, with almost 100% using the DCF method as primary or secondary valuation tool. The approach is also the dominant methodology used by Australian financial analysts and corporate financiers, with all participants always or sometimes use the DCF approach (Maria, 2010). In Europe, in most cases of valuation the valuation experts use the discount cash flow method (Bancel, 2014). According to RICS (2012) in Nordic countries for income generating commercial properties, about 75 percent of the properties are also valued by income valuation approach. The reason for the popularity of the DCF valuation approach is its flexible character.

2.8.3 **The Cost Method**

The replacement cost method takes into account the possibility that instead of buying the property, another property will be built that is a replica of the original or can offer a comparable benefit. In practice, this approach also includes estimating the depreciation of older or less viable assets when the estimated replacement cost is likely to exceed the (hypothetical) price that will be paid for the subject property (IVS, 2011). Construction costs, depreciation rates and property values are estimated using comparable elements. According to the International Valuation Standard (2005), the cost approach takes into account the possibility that instead of buying a specific property, another property can be built that replicates the original or another that can provide the same benefit. In the real estate context, unless it involves undue time, inconvenience and risk, it would not normally be justified to pay more for a particular property than the cost of buying an equivalent piece of land and building an alternative property. Additionally, according to Millington (2000), the historical cost method is used to value specialty properties that are rarely sold due to a lack of clear market demand or if there is little or no

comparable evidence. According to Vos (1996), its economic rationale is that no reasonable person will pay more for an existing property (real estate) than it would cost to buy the land and construct a new building on it. This approach is intended for use when an estimate using the capitalization method or the sales comparison method is not possible due to an almost total lack of information. For comparable market transactions, the method is intended to estimate the replacement cost and not the price change. In cost approach, quantifying Depreciation to reach at Depreciated Replacement Cost or Depreciated Reproduction Cost is the most paramount and important step.

$$(\boldsymbol{RCN - D}) + \boldsymbol{LV} = \boldsymbol{INDICATED\ VALUE\ OF\ SUBJECT\ PROPERTY} \quad \text{..... Equation 3}$$

Where: RCN = Replacement/Reproduction Cost New of the Improvements; LV=Land value, as if vacant; and PV=Present value of the property.

According to Marston (1970), estimating a property's value using the cost approach requires that the appraiser must have a good knowledge of property design and construction. Moreover, property valuer needs to know administrative laws such as the City Planning Act and the Rent Restriction Act, market prices, economic analysis skills and local taxes.

2.8.3.1 **Depreciation**

The depreciation is the measure of the cost or revalued amount of the economic benefits of the tangible fixed asset that have been consumed during the period; includes the wearing out using up or other reduction in the useful economic life of the tangible fixed asset whether arising from use, effluxion of time or obsolescence through either change in technology or demand for the goods and services produced by the asset. It is a lose in value of a property from any cause. Once the replacement cost of the modern equivalent asset is determined it is then necessary to adjust or depreciate all costs incurred to provide the modern equivalent asset to reflect differences between this modern equivalent and the actual asset being valued (RICS, 2018). The underlying principle is that the hypothetical buyer has the option of procuring either the modern equivalent or the actual asset. Therefore, the primary purpose of applying depreciation is to indicate how the market would view the asset. According to Binyam (2017) the loss in value (depreciation allowance) of a property may be caused by three principal causes: physical deterioration, functional obsolescence and economic obsolescence.

Physical Deterioration: Physical deterioration is the result of years of wear and tear that can accompany a lack of maintenance. The appraiser compares the depreciation of goods of the same age with the value of new properties in the same market. The appraiser should examine the various features of the subject property such as the roof, walls, doors, windows, floors, etc. to identify physical defects in the structure. Physical degradation is often measured by the expected physical lifetime of the asset, taking into account the different rates of wear of its components. The Depreciated Update Value (DRC) can be calculated as follows: $DV = P\left(\frac{100-rd}{100}\right)^n$; DV=depreciated value; rd=depreciation rate, 3.33% for 30 years; n= building age ……. Equation 4

Functional obsolescence: Functional obsolescence occurs when an asset's layout or specification no longer fulfills the function for which it was originally designed (RICS, 2018; Binyam, 2017). In some cases, the functional obsolescence is absolute, i.e., the asset is no longer usable. This is due to a shortage or an oversupply. It can be treatable or incurable. Terminal functional aging occurs when the defect would cost more to repair than the market is willing to pay to fix it. Functional loss can arise from;

Design fault: such as ceilings too high or too low; improper location of kitchen, bathrooms, wasted spaces; old fashioned facilities, etc.

Dysfunctional structural facilities: such as external walls not water resistant; ceilings and walls not insulated; inadequate electrical wiring, plumbing, etc.

Changes in the use of neighboring property: may also contribute to the obsolescence of a building.

Legislative Change: In the industrial sector an existing plant may be incapable of meeting current environmental regulations, or in some cases the product it was built to produce is now illegal. In the service sector, the need for occupiers to comply with current regulations on health and safety or disabled access may also give rise to differing degrees of functional obsolescence.

Economic Obsolescence: This is due to the impact of changing economic conditions on the demand for the goods or services produced by the activities (RICS, 2018). Economic obsolescence arises from the impact of changing external macro and microeconomic conditions on assets, and internal factors affecting the profitability of the accommodating company should not be considered (Onyejiaka et al., 2015). According to Onyejiaki et al (2015), causes of economic depreciation include: Threats and harassment in the neighborhood; high traffic volume; burn; Dust; Noise; unpleasant smells; Etc. Route realignment or indexing, which can reduce area and reduce demand. A decrease in demand; population shifts; depression or other adverse economic factors such as financial collapse or lack of liquidity.

2.8.3.2 **Depreciated replacement cost (DRC)**

The DRC method is a form of cost approach defined as the current cost of replacing an asset with a modern equivalent less deductions for physical deterioration and associated form of obsolescence and optimization. This method estimates the market value of real estate by adding the market value of buildable land to the cost of constructing and/or modifying the building, less depreciation (Binyam, 2017; Fattinnanzi et al., 2020; RICS, 2017).

According to Binyam (2017), in the absence of a market for land value, it is the construction cost that gives the value of a new building. When estimating the cost of reproducing the property the subject property (or refurbishing a new similar or equivalent property), the gross floor area of the property must be calculated and multiplied by the construction cost per square meter (Onyejiaka et al., 2015), as in Binyam's citation (2017).

According to Fattinnanzi et al. (2020), where market comparable examples or income-based parameters specifically concerning buildings with special features are lacking, the Depreciated

Replacement cost new views the building as if reconstructed with modern methods, design and materials that would most closely replace the use of the appraised building but provide the same utility. For example, old brick warehouses are now built with concrete block or tilted cast panel structures. Like other forms of valuation, this method is based on comparative economic theory by comparing the asset being valued to another asset (RICS, 2018). That is, unless undue time, inconvenience, risk, or other factors are involved, comparisons are made with hypothetical substitutes, also known as modern equivalents, for which potential buyers will not pay for subject property more than the acquisition cost of equivalent new property (RICS, 2018; Binyam, 2017). However, due to the lack of comparative and income parameters specific to buildings with special characteristics, the depreciated replacement cost (DRC) method remains the only possible method of estimating the market value of such properties (Fattinnanzi et al., 2020). Therefore, this method attempts to estimate replacement costs, not market prices. It does not produce a market valuation (value-in-exchange) as such because cost relates to production rather than exchange (Wyatt, 2007) as cited in Binyam (2017).

According to Binyam (2017) beside of rarely sold properties (special use properties) it is undertaken in case of new commercial properties, but as buildings and other improvements grow older, depreciation in value becomes increasingly difficult to quantify accurately. In this regard when the age of the improvement of commercial properties increases it is better use income method of valuation than replacement cost method. However, as his thesis was the use of income approach for cost methods of valuation, he disregarded the applicability of market comparison method of valuation during collateral for commercial properties. According to Fischer (2002) the process of DRC method is carried out to estimate the value of a property in cost approach:

1. Collection of relevant documents and carrying out property survey.
2. Estimate the replacement cost new (RCN) of all improvements to the land.
3. Estimate the accrued depreciation for each improvement.
4. Calculate replacement cost new less depreciation (RCNLD) by deducting all accrued depreciation from replacement cost new for each improvement. (Subtract step 3 from step 2).
5. Estimate the value of the land rights, using highest and best use.
6. Add all replacement cost new less accrued depreciation to the calculated land value.
7. This step will derive a value which is indicative of the Cost Approach to market value.

2.8.3.3 Reproduction costs new

The replacement cost of a new building is the value date cost of constructing a replica of the estimated building or an improvement based on current prices using the same or very similar construction and materials. The disadvantage is that advances in construction and methods, materials and design make it very difficult to estimate the cost of aging building structures; It is massively distorted for materials that are no longer reasonably available or that require a lot of manual work (Onyejiaka et al., 2015). However, it is the most useful for study of refined methods of depreciation, unique

construction, and occasional legal requirements for court testimony. The main items include in particular: the material costs of the reconstruction, which in turn include: the sum of labor, rental, material and transport costs; elevated; profit of the construction company; bureaucracy (administrative costs); Remodeling (construction) attorneys' fees, planning/design permit, if required; financial expenses; and the profit of the company overseeing the reconstruction.

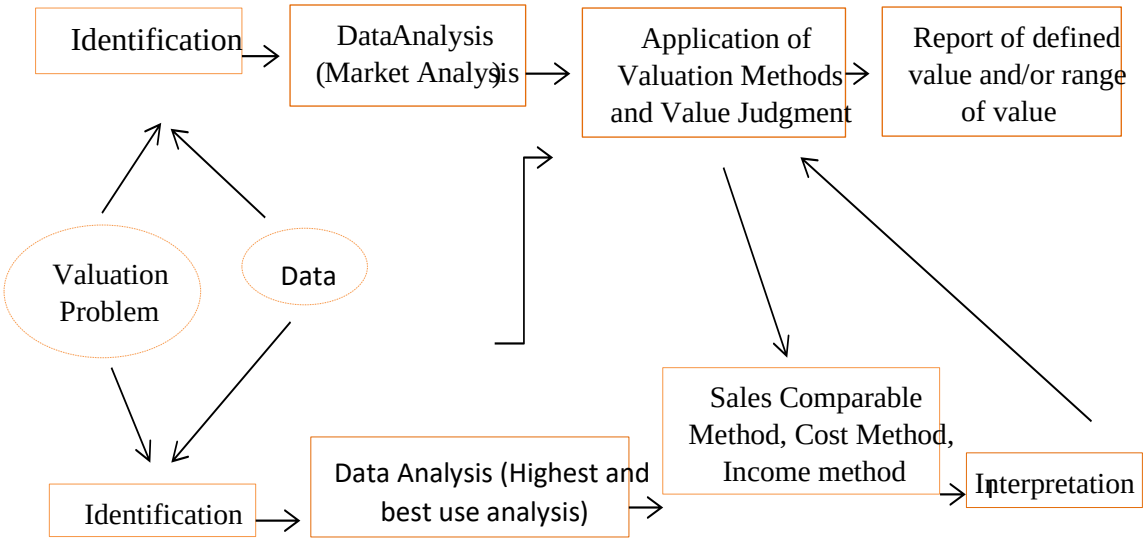


Figure 6: Valuation Process

Source: Appraisal Institute (2001)

Empirical Review

2.9 International Practices of property Valuation

As the legal system, economic development and socio-political context of nations are different in nature; the rapid growth of investment has decreased the reliability of independent national property valuation standards and guidelines; and property valuation is becoming the basis for collateral credit decisions, financial reporting of multinational companies across border property investment, securitization of real estate and the like. The accelerated pace of investment has further underscored the need for the adoption of international standards for reporting real estate values. This is supported by various authors that without international valuation standards, there was therefore a considerable risk of confusion (Tirsit, 2018; Binyam, 2017). Disagreements between national assessment bodies can lead to unintentional misunderstandings. In response to this situation, members of the Technical Committee of the Royal Institution of Chartered Surveyors (RICS) and representatives of the U.S. Valuation organizations began a dialogue in the late 1970s that led to the establishment of the International Assets Valuation Standards Committee in 1981 (Boulevard, 2009).

The IVSC has long recognized the variety of purposes for which property valuations are needed, including use in financial statements, mortgage and mortgage decisions, assignments or ownership

transactions, litigation and tax returns. In addition to standards, the IVSC provides assessments for financial reporting and secured lending, as well as advice on specific issues related to the assessment and application of standards to more specific entities and services (Beale, 2015).

The International Valuation Standards (IVS) were developed with three main objectives: first, to facilitate cross-border transactions and contribute to the viability of international real estate markets by promoting transparency in financial reporting and the reliability of credit and mortgage valuations, transferring transactions and settling in litigation or tax matters; second, to serve as a professional reference, or point of reference, for real estate appraisers from around the world, to enable them to meet the needs of the international real estate markets for reliable valuations and to meet the financial reporting requirements of the global business community; and Providing accounting and valuation standards that meet the needs of emerging and newly industrialized (TIAVSC, 1995).

In general, Valuation Standards will improve the accuracy, quality, fairness, and transparency of valuations and valuation reporting, which in turn will lead to greater confidence and reduce financial risk for those using them. In particular, the adoption by the government of a uniform set of valuation standards which is consistent with international best practice will provide consistency within local government assessors and national government agencies develop a wider understanding by the general public and help to provide equitable solutions to those affected by valuations. At the same time, it will afford greater protection for government from financial loss due to conflicting approaches, misunderstandings, or negligence (Appraisal institute, 2001).

According to European mortgage federation (2009) the property shall be valued at or less than the current market value under which it could be sold under private contract between a willing seller and an arm's length buyer on the date of valuation. The value of the collateral shall be based on the value of the property and the nature and extent of the pledge of the property taking into account the existence of prior claims. The property shall be valued by an independent valuer at or less than the market value. In those Member States that have laid down rigorous criteria for the assessment of the mortgage lending value in statutory or regulatory provisions the property may instead be valued by an independent valuer at or less than the mortgage lending value. The federation further proclaims that more frequent monitoring shall be carried out where the market is subject to significant changes in conditions. Statistical methods may be used to monitor the value of the property and to identify property that needs revaluation.

The key types of valuation in the banks of European countries are market value and mortgage lending value. Although the market specifies are different in those countries, there is a degree of convergence in valuation methods; for example, residential properties are usually valued by Comparison method, Investment/Income method, Depreciated replacement cost method and Residual method for bank purposes. Also, commercial properties are estimated using Comparison method, Depreciated

replacement cost method, Investment/Income method and Discount cash flow approach during collateral.

2.10 Property valuation in other countries

Considering the international standards for the purpose of collateral valuation gives points of reference to valuation results; thus, property appraisal standards in banks need to harmonize with each other so as to make a strong single benchmark of common standards to which every country consider it as a reference of the practice. According to European mortgage federation (2009) correct and obvious properties valuation is vital to the loan lending commercial enterprise because it promotes self-assurance withinside the collateral system. In this respect, property valuation represents one of the essential constructing blocks of the loan system. The lender calls for reality that the asset being taken as a assure for a housing mortgage is of a sure cost and could cover losses ought to the mortgage default. This self-assurance withinside the property's cost is one of the elements, which make loan debt a low risk, cheaper manner of presenting housing finance and which in turn makes homeownership a truth for lots at some stage in Europe. One of the key elements defining credit quality will be the asset's original valuation when the mortgage was advanced and then subsequent valuations monitoring the value of the underlying asset. Only if the valuation system is transparent, accurate and consistent, buyers be willing to buy properties. In order to secure the mortgage the assets will be valued at or less than the present day marketplace price under which it may be offered under private contract among a willing seller and an arm's length buyer at the date of valuation. The price of the collateral shall be primarily based totally at the price of the assets and the nature and quantity of the pledge of the assets taking into account the life of prior claims. Thus, to make the valuation transparent the assets shall be valued by an unbiased valuer at or much less than the marketplace price.

Denmark

The Danish Mortgage Credit Act states that the Danish Financial Supervisory Authority should ensure that the mortgage banks respect the Act's provisions and rules, which have been made in pursuance of the Act. The market value is the basis for mortgage valuations, taking into consideration the general economic situation and the general trend in prices. The comparison method is used for private residential properties. According to the regulation for the valuation of most types of commercial properties (with the exception of agricultural properties, which are valued using the comparison method), the investment value is used for mortgage lending purposes. The investment value is derived from capitalization of the net rentals. The basis for the calculation is primarily the actual rent or the market rent, depending which is lowest, calculated on an annual basis.

The depreciated replacement value approach is used for industrial, manufacturing homes and homes for educational, social and cultural purposes. However, for loans funded through covered bonds the cost approach can best be used for homes which can be never or not often sold

withinside the market, this approach can best be used for extremely limited kinds of homes (waterworks, energy flowers etc.) Valuers can be both internal (hired in a loan bank) or outside to the lending institution. The law attracts up some of standards for non-employees to perform valuations for loan banks. In practice, property agents usually perform valuations for loan banks. However, different individuals might also offer this service. The valuer may be dependable in line with general Tort Law and based at the agreement among the lender and the valuer concerning the valuation. There is but a special law concerning property agents' liability

Nigeria

In Nigeria, the actual property valuation career is regulated via way of means of complementary bodies, the Estate Surveyors and Valuers Registration Board of Nigeria and the Nigerian Institution of Estate Surveyors and Valuers. Babawale (2005) observed that the evolution of the Nigeria property market has been held back by a number of structural problems, among which are the risks associated with unsecured titles, high interest rates resulting from high inflation, lack of reliable transaction information, discriminatory government intervention and lack of transparency in the market. Others include obsolete training curriculum, weak regulatory framework, lack of national valuation standards, predominance of small size firms, and lack of specialization. Valuators are mostly aware of the traditional methods and the wide spread method of valuation in use is that "sales comparison method" in practice

Romania

The Romanian National Association of Chartered Valuers, is the professional competent authority that organizes and coordinates valuation activity in Romania. According to EMF-ECBC (2017) valuation activities can only be undertaken by authorized valuers which are members of the Romanian National Association of Chartered Valuers. There is no specific legal framework for the valuation of property. the value used for mortgage lending purposes is generally the market value. Three main valuation methods are used: comparison, income approach and cost approach.

For Residential properties:

- Comparison method
- Income method
- Depreciated replacement cost: for new properties or special properties (some banks do not accept this method any more)

For Commercial Properties:

- Income method or discount cash flow approach
- Comparison method
- Depreciated replacement cost method (some banks do not accept this method any more)

According to Veronica Deaca (2014) in Romania, the main challenge concerning valuation is the lack of access to information about traded properties and missing of a general data base concerning the

information about the similar and recent real properties transactions. This information is not for public access, and it is impossible to find out who, what and how has been valuated another property, so that you can compare a valuation made in the past with one made in the present. Because of this impediment, each valuer is forced to a discretion to apply another method.

2.10.1 International Code of Measuring Practice (RICS 2007d)

The measurement code practiced by valuers is more or less adopted from the international valuation standards committee. Beside IVSC standards ("white book") there are also EVS (European valuation standards, "blue book") and RICS standards (UK Royal Institution of Charted Surveyors standards, "red book") common in the European practice. Still, with wider use of IFRS the position of IVSC standards will grow stronger. Essentially, the purpose of the RICS code of measuring practice is to include concise, precise definitions for the correct measurement of buildings and property, the estimation of sizes (areas and volumes) and the classification or specification of land and buildings on a common and consistent basis. The code describes the methods of building estimation, along with when and how they can be used. The major approaches practiced in land assessment and management are:

Gross External Area (GEA)

The gross external area is the area of a building measured externally at each floor level. It is mainly used for the computation of plot ratio and other planning matters, and the estimation of building costs for residential buildings. Being an external measurement, it includes all external wall thicknesses and takes each floor into account. Thus, it must be remembered that if the building is not single-story, GEA is not the site area covered by the building. Also check whether each floor is the same shape and size of those above or below it.

Gross Internal Area (GIA)

The gross internal is the area of a building measured to the internal face of the perimeter walls at each floor level. Gross internal area is used for non-residential building costs estimation purposes and for valuation of industrial and warehouse buildings (including ancillary offices), department and variety stores, food superstores, retail warehouses and new homes for development purposes(RICS, 2007). It is broadly the gross external area with all perimeter and party wall thicknesses and external projections and finishes thereto excluded.

Net Internal Area (NIA)

The net internal area is the usable area within a building measured to the internal face of the perimeter walls at each floor level (RICS, 2007b). Mainly recommended for valuation of offices or shops, it excludes nonstable areas that would form part of the GIA. Examples of such exclusions are toilets, toilet lobbies, bathrooms, cleaners' cupboards, lift rooms, plant rooms, stairwells, lift wells, those parts used for the purpose of essential access and internal structural walls, columns and piers.

2.11 The Mandate of Property Valuation in Ethiopia

In Ethiopia there is no a legally regulated valuation system and available professionals in the field of property valuation. The ultimate ownerships of the land by the government and the public become the reason for the thin real property market in the country. The federal expropriation proclamation tried to enhance a certified appraisal professionals and a nationally adopted uniform formula for valuation. Article 9/1 of proclamation number 455/2005 is mandatory to regulate the valuation practices. And the ministry of federal government under the urban development has given the task of developing the capacity of a valuation system in the country in the collaboration with the federal and regional government organs. In the case of Addis Ababa, the office of land development and urban renewal body of the city government at each sub city is a responsible party in the process of expropriation based on the urban property valuation and compensation regulations. In the meantime, however, the implementation of the regulations is backed with the absence and/or lack of scientific and uniform standards of valuation methods in the country. This leads to applying of different valuation methods and compensation procedures in different regions of the country. The argument is that the lack of using standardized methods and procedures result in unfair valuation and compensation regimes whereby the equal rights of landholders provided under the constitution may be infringed upon.

The real property valuation has to be carried out by assembled committees of different experts with different backgrounds based on relevant qualifications (Art 9/1 of proc.455/2005). But based on this situation the regions and federal government have adopted their own valuation formula but the ministry of urban development has not yet given a clear legal framework in this regard; rather the regions have already adopted implementing the regulations mainly the compensable interests using their own formula; and it is carried out by the committee people for both the urban and rural land. The federal government regulates the procedures with regulation no.135/2007 which includes basic valuation methods and assessment procedures. The federal expropriation proclamation gives a direction that where the land to be expropriated is in rural areas, the committee shall be headed by Woreda administrative head. Hence the regionals rural and urban administrations authorities have a mandate to assemble committee of people to appraise the property. Similarly, urban administration, municipality have the power to designate the members of committee to value a property. However, when the property is a public property, it is the owner of the property, who is to estimate the value of the property being valued (Art.6 of proclamation No. 455/2005). Therefore, the Ethiopian property law in general, adopted a valuation system of an administrative nature, which is contradictory to the practices in international valuation standards.

According to Daniel (2009) there are three valuation methods for arriving at the fair market value of real property taken by the process of expropriation; the comparable sales method, income capitalization method and replacement cost method. But unlikely of comparative sales method the replacement cost method is undertaken in Ethiopia to value the property. The problem therefore, revolves around the use

of this method which is defective means to assess the market value of the property, since it pays only the cost of replacing the lost property, without considering the location value. This is due to the existing land legislation ignores location value for land; since it is considered as the public property and, hence no compensation should be paid by the government, holder of the land for fair compensation. To resolve may be given a substitute land based on the particular laws; however, still the holder has a land use right but not the ultimate ownership.

The value basis of man-made properties fixed to the land especially building, the accepted valuation basis and method is the cost replacement method; it says clearly under Art 7/1 of expropriation as; the amount of compensation for a lost property on the expropriated land must be determined by based on the basis of replacement cost of the property. Whilst the comparative market method and income capitalization method indicates the true market value of the property (RICS, 2012). In addition to article 3 and 4 of the expropriation regulation no. 135/2007 dictates the principles and procedures in replacing a lost property; as discussed above, the cost approach is the only way to arrive at the market value and thereby a fair compensation for the property holder evicted from the land. The aim is to decide whether or not this approach fairly serves its purpose in Ethiopia explicitly from other valuation methods.

2.12 Banking History and Its Property Valuation Practice in Ethiopia

In Ethiopia as the property investment is growing in steady change, demand of project financing is also increasing through secured lending. The history of modern monetary use in Ethiopia can be traced back over 2,000 years, flourishing during the period known as the Axumite Period, from 1000 to 975 AD (Pun Khrust, 1968). Ethiopia's modern banking began in 1905 with the establishment of the Abyssinian Bank under his 50-year contract with the British National Bank of Egypt (Binyam, 2017). In 1908 a new Development Bank and two other foreign banks were also established (Pan Khrust, 1968). These banks have been criticized for being wholly foreign-owned. It was thus replaced by the Bank of Ethiopia, which was the central bank during invasion of Italy from 1931 up to 1936. Italian banknotes were legal tender during this period (1936-41). Following independence from the brief Italian occupation, in which Britain's role was paramount for strategic planning during World War II, Barclays Bank was established and operated in Ethiopia from 1941 to 1943 (Gedey, 1990). The Ethiopian government then established its own bank in 1943, called the National Bank of Ethiopia, to serve both commercial and central banking. It will then be further dissolved into what is now the National Bank of Ethiopia and the Commercial Bank of Ethiopia.

Binyam (2017) also argued that before the Derg regime (1974-1991), both public and private banks operated in the country, such as the Commercial Bank of Ethiopia, Agricultural and Industrial Bank recently renamed as Development Bank of Ethiopia, and the Housing and Savings Bank later renamed as Construction and Business Bank. By then, all financial institutions, including banks, had been nationalized. After a change of government in 1991 and liberalization policies in 1992, these

financial institutions were reorganized to operate under market-based policies. Also, Proclamation No. 84/1994, which allowed the private sector to enter the banking sector, introduced a new era for the Ethiopian banking system. After this proclamation, Ethiopia has practiced the development of domestic private banks. According to the National Bank of Ethiopia (2022), there are two public banks and more than 25 private banks in the country. These banks are practicing property valuation to secure loans based on usually securing the bank advantage irrespective of uniformity of the practice for a similar purpose.

2.13 Property Valuation Practices in the Banks

2.13.1 Basis of property valuation

Ethiopia as a country lacks an assessment framework, regulatory institutions and professional appraisal firms. This has been a challenge for commercial banks valuing property without a valuation basis, although market value is recommended for the purpose (Binyam, 2017). Empirical evidence from the transaction market is almost unavailable and using more than one valuation method is clearly very difficult (Elizabet, 2017). Real estate data is found to be out of date due to a lack of empirical real estate research, professional or other capacity factors. Valuation methods in bank manuals state that the combined application of income and cost methods must be used to ensure that they can lend no more than the current value of the real estate collateral (Dashen Bank Manual, 2020; Awash Bank Manual, 2021). The valuation cost method consists of a lower value ratio than the capitalized income method and a direct comparison. Therefore, banks want to value the asset using a method that does not increase the market value (Aseres et al., 2020). The cost approach used by the appraisal banks is therefore advantageous for the banks, which is why they rely on this method (Binyam, 2017).

2.14 Real property class and valuation methods of Ethiopian bankers' association manual (EBA)

The consistency of valuation basis and methods during loan security became a challenge for banks and investors. The aim of the Ethiopian banker's association manual is to minimize variations observed on valuation methods practiced by member banks and avoid differences in the estimated value of properties given as collateral. The member banks should apply uniformity of valuation basis and methods in line with the manual (EBA, 2015). According to EBA's real property valuation manual, property valuation for loan security is better to be based on market value. But the constraint on availability of reliable transaction market data in Addis Ababa, infancy of property market as a country, difficulty of consistency in EBA's manual and each bank; only the cost approach and sometimes income approach are likely employed during the appraisal of major classes of properties. The income method is based on the income which the property is generating at the time of valuation, while cost method is based on the replacement cost of a property (Binyam, 2017). Therefore, it is

undoubtedly necessary to understand various valuation basis and methods during loan security for each property class.

2.14.1 **Commercial (Investment) Properties**

The methods for the valuation of commercial properties are, in fact based on the roots of value that individuals use to establish the value range in which there would possibly be a transaction namely; root of cost (cost approach), root of exchange (market approach) and root of use (income approach).

The use of cost approach: in the case of valuation of commercial properties; it is devised that not all costs necessarily add value in the same proportion to the property. For instance, adding a constructed area to a hotel unit represents a cost, but without admitting either higher use tariff, or the future expectation of higher occupation rate as a counterpart that means cost without value. As a result, the concept of cost of reproduction for estimating the value of commercial properties is not appropriately satisfactory; since the cost doesn't indicate the market value of the property.

The use of market comparative method: in the case of valuation of commercial properties, the approach is not adequate; because it is necessary to identify within the market universe, transaction of properties that is closely similar to the subject property, so that it helps to construct a representative sample sufficient to infer, the item under assessment may be the subject of transaction of a value comparable to that of the sample. Moreover, it is likely to understand, commercial properties are unique and subject to discrete transactions, who's physical and performance characteristics hardly require efficient sampling. Analysis of the valuation of commercial properties should consider the added value associated with the responsibility of the activity conducted in the property, which may be represented by the intangible gain of value for the entire business operation; in this case the real estate physical asset is only an integral part of the entire business in Therefore, for the specific case of commercial properties which have unavailable comparative market evidence the income method is more adequate in that it is able to reflect the true value of the property (David, 2017). Nevertheless, these approaches are criticized; when a process considers a stable net operating income in a real estate market having a cyclical character may overvalue the property in the recession phase of the property and undervalue it in the expansion phase.

Application of the discounted cashflow method: The most modern and technically advanced method of valuing commercial real estate is the discounting of the cash flows resulting from the adjustments in the financial markets. However, the valuation is influenced by uncertainties: uncertainty of available comparative data; Uncertainty about current and future market conditions and uncertainty about specific points for the property concerned; uncertainty in the specific inputs for the subject property; all these will lead to uncertainty with the output figure, the estimated probable price (Maria, 2010). According to IVS (2017), the recommended basis for real estate valuation for loan collateral is market value or valuation based on forced liquidation, i.e., a forced or short-term sale condition compared to an average market absorption. However, the use of the market value approach has been

criticized in the context of the collateral. Market values are cyclically affected by previously inflated prices and bank credit expansion (Borio et al., 2002). In this case, the valuation of commercial real estate can only be reliable if supported by the value of the investment opportunity, which is by converting the net operating income of the investment into present value (Belachew, 2013). According to the EBA manual, the final reconciliation of the market value indication resulting from the cost-income approach is weighted as follows.

Table 1: Valuation Approach for Commercial/Investment Property

No	CORRELATION FACTOR	Factor weight (100%)	ASSIGNED WEIGHT	
			Cost approach	Income approach
1	Strength of approach to value	40	35	65
2	The relevance of approaches to the subject	30	40	60
3	Amount and reliability of data for each approach	30	45	55
	Total	100	40%	60%
	Value indicative using Cost approach		X	
	Value indicative using the Income approach			Y
	Final Reconciled Market Value of the property		0.4(X)+0.6(Y)	

Source: Ethiopian bankers association manual (2015)

2.14.2 Residential properties

These are those built primarily for residential purposes, both owned and rented. The prospective buyer will consider the suitability of the premises for the required needs rather than the expected return on the investment in the property. Therefore, more weight should be given to the indicative cost approach than to the indicative cash flow approach, details of which are given in the table below:

Table 2: Valuation Approach for residential Property

No	CORRELATION FACTOR	Factor weight (100%)	ASSIGNED WEIGHT	
			Cost approach	Income approach
1	Strength of approach to value	40	85	15

2	The relevance of approaches to the subject	30	80	20
3	Amount and reliability of data for each approach	30	74	26
	Total	100	80%	20%
	Value indicative using Cost approach		X	
	Value indicative using the Income approach			Y
	Final Reconciled Market Value of the property		0.8*(X)+0.2*(Y)	

Source: Ethiopian bankers association manual (2015)

2.14.3 **Special Use Properties**

These property classes are rarely sold on the open market, except for company relationship, configuration, size, location, or other sale, due to the uniqueness that may arise from their particular nature and characteristics. Key characteristics of the specialized property are that they: Are useful to a limited number of uses or users; Are rarely, if ever, sold on the open market, except as part of the business entity; Have generally specialized structures; and Earn revenue that has not been derived from an open market and for which market-based evidence does not exist. In general, specialized properties are those that, due to some specialized physical or geographical factor, offers very little utility for any purpose other than that for which they were originally designed. These classes of properties are so specialized by nature that no comparable market data could be employed to apply the Income approach, as tabulated below. Hence, the final market value conclusion will fully rely on the results of the Cost approach.

Table 3: Valuation Approch for Special Use Property

			ASSIGNED WEIGHT	
No	CORRELATION FACTOR	Factor weight (100%)	Cost approach	Income approach
1	Strength of approach to value	40	100	0
2	The relevance of approaches to the subject	30	100	0
3	Amount and reliability of data for each approach	30	100	0

Total	100	100%	0
Value indicative using Cost approach		X	
Value indicative using the Income approach			Y
Final Reconciled Market Value of the property			X

Source: Ethiopian bankers association manual (2015)

2.15 Lessons Learned from the Literature

Property is a legal term that refers to the tips governing people's access and control over physical (tangible) and intangible property such as inventions or contractual rights and financial claims. The right of ownership in the true sense of the law is the exclusive right to control, use, transfer, a thing or thing of economic importance and its fruits and to exclude their use and enjoyment by any other subject who might misuse them. It is a concept that refers to the rights and duties, privileges, and limitations that govern people's relationships regarding things of economic or financial value. Real property includes all rights, interests and benefits associated with ownership of real estate; is a right of ownership, control, use or occupancy of real property that is legally recorded through a legal process in a formal document such as a title deed or lease.

Currently, the International Valuation Standards Committee is dedicated about the principle that the valuation discipline is a profession that has long-term knowledge, identified and accepted scientific and other methods and procedures, a significant social need for services, generally accepted ethical principles, and potential harm to individuals and society at large through incompetence, misunderstanding, fraud or misconduct.

The valuation basis is the assumptions of the valuation on which the declared value is based; indicates the probable price of the property on the open market, such as the nature of the hypothetical transaction, the relationship and motivation of the parties, and the degree of exposure of the property to the market. The appropriate choice of valuation basis depends on the purpose of the valuation. The basis of valuation and the valuation approach are treated differently; the valuation method is a process of achieving specific result depending on the valuation base chosen; while the valuation basis determines the outcome of the valuation, not the vice versa. There are three internationally recognized methods of real estate valuation, namely the market comparison, the income approach and the cost approach, all of which are based on the principle of price equilibrium. In most cases, these valuation approaches to mortgage pricing can be appropriate when based on properly analyzed market data. The market approach assumes that the value of a property is based on the opinions of a typical home buyer and seller. This includes comparing the scenario asset with unique same or similar assets for

which rate data is available. The income approach assumes that the value of the property is based on typical investor requirements in terms of returns, current financing options and real estate risks. In the income approach, the value of an asset is determined by the value of the income, cash flow, or cost savings generated by the asset. In contrast, the cost-based approach assumes that the value of the property is included in the cost of the property based on the cost of the land and construction less depreciation and amortization. Therefore, with this approach, the real estate value is determined by considering the market value of the land and building separately and then adding them together.

According to IVSC (2017), the accelerated pace of investment globalization has underscored the need to adopt international standards for reporting real estate values. Therefore, without international valuation standards, there is a significant risk of confusion. Disagreements between national assessment bodies can lead to unintentional misunderstandings. In developing countries like Ethiopia, where the economy is booming, borrowers expect to get the most out of lending at the market price of the asset as collateral. However, the practice is not based on the price of real estate on the open market. In fact, Ethiopia lacks professional valuation frameworks, regulatory institutions and valuation firms to collect real estate market data. While the aim of the Ethiopian Bankers Association Manual is to minimize observed discrepancies in the valuation methods used by member banks and to avoid discrepancies, it is a step towards promoting the consistency of banks' valuation methods in accordance with generally accepted valuation techniques. However, member banks estimate real estate values using this method is not yet scientific. Therefore, the valuation of a mortgage and/or a collateral in Ethiopia is contrary to standard international valuation and professional practice. To fill this gap, different authors conducted research in the practices. However, the studies conducted are mainly focused on the existing practices of banks. The studies are deficient in comparing the consistency of the practice between the banks. Moreover, the variation of collateral value in the banks are not compared with the actual market value. Therefore, the study intended to fill the gaps in the practice.

CHAPTER THREE

RESEARCH MATERIAL AND METHODS

3.1 Research design

In this section the research has both conceptual and empirical parts which seek to study existing real property valuation basis and methods and consistency of practices between banks for collateral purpose. The study also aims to compare results of estimation in the banks if the practice by the banks predicts the actual market value. For the purpose of this study the researcher focused on the existing real property valuation practices of the banks. To achieve this, the research deals the study using case study method; because case study allows using a variety of data sources, data types, and data collection tools. The use of variety of data collection methods facilitated the validation of data through triangulation. It also avoids bias and error of data. In this regard, the study is limited to the practice of existing property valuation practices adopted by the banks. First, cases are not selected randomly; instead, they are selected deliberately based on known attributes to be found in the cases. Second, the criteria used for the selection of cases need to be made explicit and justified as an essential part of the methodology. Thus, the case study method was considered appropriate for this study since it allowed direct observation of activities under research and interviews of the persons involved in the events.

3.1 Selection of Cases (method of sampling)

In Addis Ababa, there are a total of 25 actively working both private and government owned banks (commercial bank of Ethiopia, Dashen bank, Birhan bank, Nib international bank, Wegagen bank, Zemen bank, Abyssinia bank, Oromia bank, Awash international bank, Bunna international bank, Debub Global bank, Lion international bank, Development bank of Ethiopia, Enat bank, Amhara bank, Abay bank, Addis international bank, cooperative bank of Oromia, Lion international bank, Hibret bank, Zamzam bank, Hijira bank, Sinqee bank, Ahadu bank, Tshai Bank) which are accountable for the national bank of Ethiopia. All banks are predominantly involved in real property valuation which provide mortgage credits and loans for households and firms. Among these only private commercial banks are selected. This is because privatization policy of the government is constantly changing. Now a days the government encourage privatization of government owned companies. Private companies (banks) are more competitive than government owned banks. For the same purpose of valuation, banks practice valuation differently. Moreover, most of the banks developed their manuals, and some of the banks used nationally developed EBA's Manual. Under a similar property and purpose of valuation the existing practices in the bank’s focus on cost method; and others employ both cost and rarely income method. Moreover, the practices are not based on the generally accepted practices of international standards. The study also gets a touch with the comparison of banks valuation result with international

practice for the same purpose of valuation on a similar property. Such organizational divergence has helped the study to have a touch with consistency of practices between the banks.

Accordingly, a purposive sampling technique was used to select two banks from a total of 25 banks. The reason why the study selected these banks is because they are the first private banks financing households and firms by practicing estimation of collateral properties after the beginning of free market economy. These banks become the leading private institutions with high financial mobilization and number of branches they expanded in the country. Based on the observation in the national bank of Ethiopia, annual profits of these banks are also reported as the highest of other private banks (NBE, 2021). This indicates, banks have a large number of branches and customers offering loans (NBE, 2022). The valuation request of the customers is through the branch banks. Hence a bank with large number of branches will be offered by a relatively large number of properties for loan access. And banks which value large number of properties for loan security is better to undertake the case study.

The banks have a total of 78 valuers actively practicing valuation for collateral. The professional expertise of the valuers is diverse in their work experience, positions and educational background. Therefore, the appropriate technique of sampling is purposive sampling. And then 30 experienced valuators are purposively selected who are diverse in their work experience, staff positions and educational background and directly practicing property value estimation. The number of valuators selected are proportionally equal 15 from each bank.

The study used purposive sampling designs. The following *table 4* shows detail cases (sample) determination.

Table 4: Cases Size Determination

No.	Types of properties valued	No. of selected valuators from each bank	
		Awash bank	Dashen bank
1	For one residential property	3	3
2	For one commercial property	3	3
3	For one condominium flat property	3	3
4	For one warehouse and storage property	3	3
5	For one fuel station property	3	3
	Total	**15**	**15**
	Total sample size	**30**	

Source: By the author

The property classes estimated by both banks are five from the five categories of properties based on the banks' manuals. The study has taken all those estimated properties. For one type of property three valuers from each bank are conducted to investigate the basis and methods the valuers used for each

property. As these properties are overlap valuated and appraised by both banks in August 2022 so that it is possible to assess the consistency of valuation basis and methods under a similar type of property and purpose of valuation (collateral and/or mortgage) between the banks. Moreover, this also helped the study to compare if the banks touch the actual market value in a similar valuation date.

3.2 The Research Approaches

The approach focused on more qualitative than quantitative approach but mixed of the two approaches. The qualitative approach is where answers are not given in quantitative forms for questions asked. The study used explanatory approach to explain qualitative data the existing appraisal basis and methods of real property valuation in banks. In this approach numbers are not of primary interest but should be of a qualitative kind. The answers are stated by words rather than numbers. Because the intention is not to get broad and general picture with related to numbers or equivalent. The study also used descriptive approach to analyze numerical data just to explain the significance of value variation in the consistency of valuation reports between the banks. It is the researcher's intentions to gain a deeper understanding of the phenomenon of existing real property appraisal. Therefore, the qualitatively aimed research approach best fits the intention of the research. It is the author's beliefs that the choice of method is consistent with the purpose of the study.

3.3 Data Sources and Method of Data Collection

The study used primary data collected through depth interviews, questionnaire and desk study, field observation or physical inspection and valuation of sample properties. The secondary data are gathered from documented and published sources including books, journals, central statistics reports and relevant offices.

Depth interview: To study the existing valuation methods and basis of banks, depth interview is intended to produce primary data responses through direct questioning. This is because the researcher believes that people like more to talk than writing about events. This data helped the study to identify the current basis and methods each valuer in the case study is practicing for each property class in a similar purpose of valuation and type of property. The study interviewed valuers who are divers in their experience and roles and directly participating in the value estimation process. They interviewees are value makers/checkers, managers, directors, engineering service department heads. This helped the study to compare the valuer selection of valuation basis and nethods to arrive at the collateral value of a property under the purpose. Therefore, valuers from each bank are supposed to be able to provide variety of adequate information. The responses are stated by words and numbers. To increase the reliability of the information from the interviewees, the study prepared similar standardized interview questions and are administered to them separately.

In addition, the study collected comparative market evidence from brokers particularly involving in the market, clients or legal representatives of clients in the study area. This helped to grasp market evidence for the study to compare the value assessed by the banks with what the market value offers. The study made adjustments of value-significant differences between each comparable and the subject property qualitatively or a quantitative to weight comparable properties, isolate differences in the elements, quantify these differences and adjust the values accordingly.

Questionnaire and Desk study: provide the primary data for the study a questionnaire is designed following an in-depth contextual review, and distributed to banks. The questionnaire designed for this study includes both the open and closed ended forms of questions. In the open-ended part of the questionnaire, respondents are asked to express their opinion or to reply in a way they like to answer the questions asked. In the closed ended part of the questionnaire the respondents are asked simply to show their choices on the statements outlined. To supplement the questionnaire, a desk study is conducted involving property valuation techniques in the bank engineering department.

Site inspection or Field Observation and Valuation of selected collateral Properties: To check the consistency of implementation of guidelines and steps of survey of each property will reveal facts about the consistency of procedure across these banks. Hence the study will carry out on-site observation in order to evaluate the physical characteristics of the area, the extent and state of repair of the subject property, land improvements therein and location of the neighborhood, to ascertain the description of the subject property, constructional and details of the properties, the use and availability of utilities, facilities and services present in the subject property. Therefore, inspection helped the study to verify the likely gaps to be encountered in carrying out the valuation process.

Review of relevant literatures: the document sources of data for the study are classified as; Legal documents including constitution, expropriation regulation, expropriation proclamation, lease regulation, lease proclamation, civil law of Ethiopia, central statistics reports, Ethiopian bankers' association manual and the like dealing with valuation. Academic literature of various research work and studies on issues/problems related to the topic such as; published journals, reports, books, project reports, and related materials. The international practices: include RICS (Royal institute of chartered Surveyors named as the Red book), IVSC (international valuation standards council), The Appraisal-Institute (2001) and the like. In addition, the case study also collected documents of both subject and comparable properties, such as land lease agreements, bills of quantity, built drawings, recently prepared property valuation data, payments made for contractors and costs outlaid for Lease.

3.4 Method of Analysis

The study used explanatory approach to analyze qualitative data; and descriptive approach to analyze the quantitative data from the clients' archive documents in the banks and numerical data from brokers in the market. This is because these data types collected from banks are used as indicating the level of inconsistency with regard to methods and basis of valuation in the selected banks. The study is as well

intended to check value variance estimated between banks. To compare the bank's assessed value, the study evaluated the results of each bank. The study also analyzed the market value of each properties from numeric data of brokers and clients (and/or legal representatives of clients). Thus, study conducted property valuation by taking five selected buildings found in the capital city. Then, the study compared property value assessed by the banks with the market value assessed by the study using international valuation practices. The study employed the three methods of valuation for the selected collaterals, that is market comparison method, depreciated replacement cost method and income method with a view to compare if the method employed by the bank dictates the market value of subject property based on international practice. The role of the valuation results here is to show value variance between assessed value and actual market value.

The Microsoft excel and Microsoft word are used; hence tables, graphs and diagrams are employed to explain the discussion. Based on the findings, appropriate bases and approaches that could be part of the valuation framework are suggested. The study set a benchmark about guidelines, procedures, standards and criteria on the practice of property valuation in the banks. Finally, the research provided the consistent valuation policy in banks.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

The real property valuation for collateral valuation system in Ethiopia contradicts the real property valuation practice of other countries where relatively accurate and reliable valuation are reported by highly skilled property valuation professionals who use practices compatible to international valuation standards and professional expertise(TEGoVA, 2016). Unlike to international standards, implementation of the valuation regulations in the study area are less backed by scientific and uniform standards of valuation methods. This research therefore explained the procedures banks are practicing valuation and checked the consistency between selected banks and the international standards. The study analyzed the case study data as follows:

4.2 Results from the Interview

4.2.1 Professional Skills, Knowledge Required and Role of Property Appraisers

Interviewees contacted for this research clearly indicated that professionals with proper academic background need to occupy the position to properly value properties. According to the respondents, the best professions suited for the valuation purpose in the banks are civil engineering, construction technology and management than others academic background and some respondents suggest that professionals in the areas of property valuation, architects and accountants can also conduct a proper valuation.

Table 5: Academic Background Required

No	Educational Background Required by property Valuator	Proportion of respondents who indicated that these professionals can conduct proper valuation (%)
1	Civil engineers	100
2	Construction-technology and management professionals	60
3	Property valuators	40
4	Architects	2
5	Accountants	2
6	Electro mechanical engineers	1
7	Short trained person in valuation	1
8	Brokers	1

9	Any person	None

Source: Field survey (2022)

The valuers were also asked if there is a valuation certification in their bank; most of them answered "no". Some even revealed that they are not familiar with the existence of certified valuers in Ethiopia due to the lack of legal framework in the country. This is true because there is no responsible legal body of the government who provides valuation accreditation to professionals and institutions. Thus, the profession is not that much regulated. However, most of valuers are aware that certification and licensing at the international level is practiced which is also essential at local level. Most of the existing valuers are not accredited except the valuers chartered licensed from abroad. The local valuers practice the valuation simply through registered trade license from trade office of the government. Therefore, the property valuation practice contradicts to the red book, IVSC and appraisal institute as international standards recommend that property valuation must be undertaken through certified licensed professionals.

The valuers were also asked about what they are expected to know before they do the valuation task for the banks. All of respondents answered that before valuation, they must know exactly where the property's location is, legal documents such as land holding certificate, and approved plans of the property. According to the literature a valuer must know exactly what type of value for what type of property he is seeking to find, what type of measurement will be used and what type of reliable instruments will be applied, for whom he/she is valuing it, for what purpose this valuation is being sought. Without this knowledge the resultant figure will have no relevance and has a potential to be out of context and interpreted wrongly.

4.3 Types of Properties, Purpose, Factors, Documents, and Method of Measurement Of Valuation

4.3.1 Type of Properties Valued by Valuers

When asked about the type of properties they valued in their bank, interviewees revealed that all of the valuers valued different types of properties in the past 5 years. They mentioned the various categories of properties including: *Commercial buildings;* Hotels, hospitals, Commercial with residential apartments, Commercial and office buildings, Apartment and guest house buildings etc. *Residential buildings;* Mud house, Villas, Apartment and condominium flats etc. *Specialized service buildings;* Coffee washing sites, Fuel stations, Greenhouse, Farm Developments, Silos, Tankers, Churches, Mosques etc.

4.3.2 Purpose of valuation

Valuation is done for various purposes. According to the interview result, valuation practices in the two banks are done for the purposes such as:

Table 6: Purpose of property valuation in the selected banks

Purpose of valuation	Awash bank	Dashen bank
collateral	✓	✓
project financing	✓	✓
Foreclosure	✓	✓
Loan security	✓	✓
Financial reporting	X	X

Source: Field survey (2022

4.3.3 Factors of Property Valuation Process for Collateral

The researcher also asked the respondents to indicate the dominant factors their banks think to determine values of properties. Accordingly, the valuators revealed that, Cost of construction material, Location value, Devaluation of properties due unpredictable market variations, Brokers involvement, Neighborhood infrastructure, Political instability and Property type are the major factors considered by the banks. Among many factors, location is a predominant factor that determines the land grade. The characteristics of property market are also a big factor. A specialist property valuator in the bank briefed with examples as; a property of 150m2 plot located in Legetafo city is undervalue than the 150m² plot in the expansion zone of Addis Ababa although they have the same plot size. Location value of plot in Addis Ababa has more worth than a similar plot in Legetafo city. The location value changes the value of the entire property because of accessibility, complementarity, and intensity of its use.

According to the interview the banks use only the manual prepared by the bank itself. The manual tries to dictate the market value but still lacks the current market indication. It was updated a year before now. The manual does not leave any discretion for the user. A valuer at the Ethiopian banker's association indicated that the manual is not being used according to its objective. It is prepared for member banks to use similar procedures to reduce unwanted competition across the banks. However, banks tend to use their own manuals. Therefore, the exiting practice of the banks shows the guideline of the practice is not compatible to the generally accepted methods of the manual prepared by the bankers' association. This has led to inconsistency of the valuation practice across the banks.

4.3.4 The document required for collateral properties

Normally, as per the manuals a branch manager needs to ensure that the property is fit to collateral when a customer comes to the branch for a loan request. In such case, the branch manager needs to request the following documents to be secured: Land holding certificate or land use ownership confirmation letter that stipulates owner and authorized purpose of land and any obligations/limitations attached to land use on the site from concerned government body (copy); Approved architectural plans of the site development with demarcated boundary (original);

Structural plans (if under construction); Lease agreement, if land holding is on lease basis; Bill of quantity (if under construction); Purchase/Performa invoices (whenever necessary) and Construction permit certificate (Copy).

Moreover, the credit department requests legal documents based on its loan policy procedures and directives of local government municipalities. It is only after fulfilling these that it is decided to be evaluated and then the branch manager will request to the engineering service department to conduct valuation.

Based on the request and order given by the credit department committee, the assigned valuator will survey the property and takes information related to: Land holding title deeds/ ownership dedication documents and related information; Confirm that the ownership information, plot orientation and dimension indicated on the title corresponds with the physical property; Confirm that the approved plan fit in the land holding certificate, and if revision of plan may be required; Carryout measurement of actual plot, to determine dimensions and plot area; Confirm that if the built structure may have size deviation on contrary to LHC externally or Internally; Take note of location of the property with respect to prominent land marks; Check regulations, easements or restrictions; Information on improvements on the site: Measurement of buildings, compound works, fences and ancillary facilities; Construction details and improvement Category, age of Property, condition and depreciation Information; Neighborhood information: Take representative picture; General use of property; Location; Type and width of access road; Distance from main road; Availability of basic utilities. The response from the interview in the two banks revealed that except in few conditions the major procedures undertaken by both banks are similar regarding collecting the relevant document and carrying out property survey.

4.3.5 Method of measurement

The study asked the interviewees about which internationally accepted code of conduct of measurement is undertaken to calculate the value of each property. A valuer revealed that the bank accepts best suited code of measurement from the Red Book RICS. As the aim of the cost method is to know the exact figure of replacement cost of existing improvement; the gross external area is best suited to the approach. In the case of condominium and residential apartments, the gross internal area of housing unit is applied. Whereas in the case of the bank during estimation of commercial properties income method is additionally used to reach at the rental value of properties using net internal area method.

4.4 Real property valuation practice by Awash bank

4.4.1 Document list required

The value maker should check the following documents of valuation request from the branch: Land holding certificate (title deed); Building permit architectural plans permitted by the respective

authority; Cost specification and Bill of quantities for under construction improvements and Other relevant documents deemed necessary for specific task.

4.4.2 Processes of collateral valuation

According to the manual of the bank the process of cost method/approach analysis involves various steps to calculate the value of the property. First a valuer survey the property to collect relevant data such as: Checking Land and title deed(ownership information); Confirm that the ownership information, plot orientation and dimensions indicated on the title correspond with the physical property, and take the owner's address; Measure the actual plot, to determine dimensions and plot area; Take note of any encroachments or reductions of in respect of the title deed; Take note of the location of the property with respect to prominent landmarks; and Data collection about any improvements on the site.

4.4.3 Method of Measurement

The valuation manual adopts code of measurement from the Red Book RICS based on the purpose of valuation and method of valuation in the bank. Gross external area is used to calculate the plinth area/volume improvements. All internal floor area measurements shall be taken as a built-up area taken from outside walls excluding external verandahs, balconies, and lobby. This is in the case of cost approach; the aim of the method is to know the exact figure of total replacement cost of existing building. Hence the gross external area is best suited to the approach.

4.4.4 Building valuation practice

4.4.4.1 Cost approach (Depreciated replacement cost method)

The approach in the bank seeks to estimate replacement cost but not exchange price. This is because of an almost complete lack of comparable market transaction evidence. It does not create a market valuation (value-in-exchange) as such because cost relates to production, not exchange, and it is often regarded as the method of last option for collateral valuation. The method involves assessing the value of a land holding right in its existing use and adding the replacement cost of the building and other structures, adjusted for age and obsolescence.

4.4.4.2 Bill of quantity method

After completing the required documentation, a cost estimate for the building under construction project is prepared using the BOQ method. In this case, the expert will use the following improvement estimation procedures: checking the amount against the documentation provided; Check unit prices according to the cost estimation manual; Determine the cost of the finished project using the base area/volume method (using appropriate building value factors and equations); and estimating the expected costs of the planned changes.

The main purpose of project costing using the plinth area/volume method is to avoid fluctuations in project costs during and at the end of construction. Thus, in the initial valuation of a building under construction, the real estate appraiser determines the cost of the project, assuming that the construction of the building will be carried out with the materials specified in the specifications and bill of quantities, adjusting the unit price and amounting accordingly. When the valuation of a property under construction is required for project finance/guarantee/foreclosure purposes, the valuer will use the following techniques; categorization of project progress; determine the expected market value of the property after completion of the project using the empirical formulas in the manual and other relevant procedures set out in this manual, assuming the prevailing market parameters; Indicate the percentage of work done; Calculate the percentage of work left to be done and determine the current market value of the property in relation to the work done. BOQ submitted by the client to the project estimate and the realized amount must not exceed the estimate prepared by the bank's expert by more than 25%. In this case, the appraiser can reduce both the cost of the project and the amount realized by a factor greater than the percentage. If the costs indicated in the BOQ are 25% lower than the bank's expert's estimate, the expert will ask for the discrepancy to be corrected or provide explanations confirming the amount.

However, the mitigated the front-loading problem; the BOQ for the substructure of high-rise buildings, villas and a multi-purpose hall will not exceed 25%, 30% and 40% of the total project costs, respectively. In case the substructure exceeds this limit, the customer must provide the construction drawings and upload the sheets to check their quantity.

4.4.5 Location value and determination of rates of land use right

4.4.5.1 Determination of plot grade

The manual of Awash bank determines the land grades based on the guidelines of the valuation manual developed by the bank itself. According to the manual of the bank, the guidelines used for the land grade is determined as follows: first grade is of the distance of property line is 100m from the major road; second grade is 150m from the end limit of the first-grade plot; the third grade should be 350m from the end limit of the second-grade plot and any plot areas located beyond the end limit of the third-grade plot should be categorized as fourth grade plots. In this regard road types are decided based on the pavement type and width of roads. Coble and gravel paved roads in kebele or woreda with a total width greater than or equal to 20m must be taken as main roads. Whereas exceptionally for asphalt road width greater than 15m must be taken as main road. The plots adjacent to the main roads have much higher values than the plots in the same kebele and woreda. Accordingly, the best plot within this kebele or woreda and other grades should be assigned by the corresponding first grade listed above according to the rates on the location parameters listed above. Additionally, the valuator should consider frontage, shape and natural terrain of the plot in determining plot grades regardless of the plot area. According to the bank the rank of plot grades in Addis Ababa is listed as follow:

Table 7: Awash Bank Manual Plot Grade in Addis Ababa

Rank	1	2	3	4	5	6	7	8	9	10	11	12	13
Grade	1-1D'	1-1D	1-1C	1-1B	1-1A	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2

Source: Awash bank manual (2021)

The plot grade and location value as described above works for plots located in Addis Ababa only. The manual categorized the 10 sub cities in 20 neighborhoods by location routes and street details. The neighborhoods in the new sub city of Lemi Kura are included in the adjacent sub cities. The manual argued that because location is the most dominant factor in property market value so whatever the building types, the land value will be changed due to the market characteristics of the location route and street details. Moreover, the manual indicated that all plots adjacent to the location routes and street details shall have the grades indicated explicitly. And plots 100 meters range but not adjacent to these roads shall be valued with the corresponding next grade to the grades for adjacent plots unless it is not noted in the manual implicitly.

The plot grade for outlying area is the function of the area of its land use right. The manual stated that plots in surrounding Oromia region around Addis Ababa held not much less price than their adjacent plot areas located in Addis Ababa. The plot grade is calculated as y=k-mA, where; Y= location value, k= minimum plot area permitted by the municipal, m= magnitude of change of plot area and A= area of plot of collateral property. Thus, the method of grading for outlying areas is different from the guidelines for Addis Ababa. However, there is no identification of planning controls in that location. The approach used does not consider any land use restriction respective of the property being valued.

4.4.5.2 Rates of land use right

According to the Ethiopian bankers association manual (2015) the rate to be undertaken to estimate the location value to a land holding right of a property right over a collateral property held by an owner on a permit basis in Addis Ababa is calculated based on prepared empirical equation of the association's manual. Hence the rate is the function of property's location (neighborhood route), plot grade, plot area range. Therefore, the figure is determined using the corresponding empirical equation of value of a certain land use right that brings it to its market value indication in birr/ meter square. According to the EBA manual, for any plot acquired in lease basis from the respective lease office, the value of a land use right shall be calculated by deducting liabilities on the title deed to the lease office from the market value derived above in proportion to the remaining lease period. Therefore, the value of the lease basis land use right will be calculated using a mathematical formula as follows:

$$\boldsymbol{Value\ of\ (LHR)} = market\ value\ based\ on\ the\ plot\ grade * \left(\frac{\boldsymbol{Remaining\ Lease\ Period}}{\boldsymbol{Total\ lease\ period}}\right) - \boldsymbol{unpaid\ sum\ owed\ to\ lease\ office} \ldots\ldots\ldots \text{Equation 5}$$

However, in the case of Awash bank the lease method is not issued in the estimation process; rather the value maker gives remarks about the lease to the branch credit department. Thus, the documents of lease agreement and lease payment receipts are not required in the value estimation process and the land grade indicated in the land holding certificate is not considered to decide the location value.

4.4.5.3 Method of valuation adopted for the selected collateral properties in Awash bank

The manual of the Ethiopian bankers association recommends that the two methods (depreciated replacement cost and income approach) have strength and relevancy to indicate the market value of the operating residential and commercial properties. For a property which is specialized in its use should be estimated in cost approach (such as warehouse, fuel station, agricultural farms and the like). However, according to the literature, the cost approach is mostly used as a check on the reasonableness of the value determined using another valuation approach. Accordingly, the manuals of the banks promised to value the properties based on the market evidence; however, practically the valuers ultimately depend on bank's guideline which is a nondiscretionary method of valuation during collateral. Thus, the bank employed plinth area method of cost method as follows:

Table 8: Assessed Value of Collateral by Awash Bank

		Property			
	A	**B**	**C**	**D**	**E**
Awash bank results					
Plot Areal(M²)	250	1,140	106.44	2,000	1,240
Plot Grade	second	first	second	third	first
Distance From the Main Road	250m	near	250	350	near
Purpose of valuation	Collateral	collateral	mortgage	collateral	collateral
Valuation method used	Cost method	Cost method	Cost method	Cost method	Cost method
Building Value	11,925,200	165,831,000	2,554,560	12,844,320	7,817,500
Location Value	9,416,750	69,540,300	4,009,275	21,224,000	27,587,740
Total value	21,341,950	235,371,300	6,563,835	34,068,320	35,405,240
Forced Sale Value	21,000,000	235,000,000	6,563,835	34,000,000	35,000,000

Source: Awash bank (2022)

As the *table 8* above portrayed, practically Awash bank did not employ market comparison approach from the nearby comparable sold properties in the area. The valuers also did not collect income data from the comparable properties to employ income approach; thus, no caprate is determined for the assignment. Moreover, the bank's valuers did not determine the appropriate

valuation base for the purpose. Only the plinth area of cost approach is employed based on the perception that the value of the property is inherent in the cost of creating the property (Miller & Geltner, 2004). In this case lease arrears of the collaterals are not considered for entire valuae of collaterals; thus, the location value of all plots is considered based on the plot grade depicted in the manual. Finally, market values of collaterals A, B, C, D and E determined for forced sale are 21,000,000 birr; 235,000,000 birr; 6,563,835 birr; 34,000,000 birr and 35,000,000 birr respectively.

4.5 Real property valuation practice by Dashen bank

The Dashen bank manual (2020) adopted that the combination of cost approach and income approach for the valuation of properties mortgaged as collaterals; basically, to cope with the varying market values. The location value is determined based on assessment of local market value of the land. Moreover, the manual specifies real properties are often considered by the bank as back-up related to any risk associated with the loan they grant for a business. So, such property is expected to endure providing utility within the collateral period thereby easily marketable. Properties of dilapidated condition are considered as they don't last the collateral period. Properties built by the minimum standard material have no a means to be considered as collateral/ mortgage security.

4.5.1 Process of estimation for collateral

The manual outlined the basic steps the engineering service department should follow in the process of collateral estimation. These are:

- Branches, district offices or other authorized for accepting property as collateral have to pay a site visit with the assigned engineer where the property is located.
- Visible and clear photographic documents shall be captured from all side
- Actual measurements of the plots verified against land holding certificate shall be done by assigned maker
- Built structure conformation with the approved plan shall be strictly checked and findings should be part of the report of the value maker.
- The engineer shall register carefully description of dwellings and improvements within the compound.
- The site visit report shall be registered on the standard format prepared for this purpose showing rough sketch of arrangement of dwellings within the compound.
- On the report format, the adjacent neighbors name (if available) shall be referenced on all sides to avoid ambiguity of identification and serve as future aid to locate the property without any difficulty.

4.5.2 Document list required for collateral valuation

The manual clearly identified the fundamental documents expected from collateral estimation requesting organs when they ask for engineering service department to undertake property estimation. A memo addressed to engineering service department is expected to be forwarded for initiating an estimation request depicting the purpose of valuation such as collateral, finance and filling in the necessary information on the format prepared for this purpose. Thus, the memo must include: *Land Holding Certificate:* Copy of LHC confirmed by signature of the branch manager or relationship manager that is checked against original, Lease agreement; probably plot ownership may sometimes be a lease hold; in this case paid receipts and lease agreements are expected to be submitted. *Approved plan:* Approved plans expected for submittal should include architectural plan which must be duly stamped and permitted for construction by concerned government authorities; If approved plans are under the custody of other banks, copy of the documents should be availed; If forcing situation prevail requiring estimation to be done right on site by taking actual measurements, requesting organs have to initiate a memo stating the aforementioned situation and taking responsibility to furnish the same not later than five working days after site visit; However, if documents are not availed within the stated days above, the memo remains invalid; and new memo shall be sent with complete documents for consideration and If the property doesn't have an approved plan at all and requiring estimation to be done right on site by taking actual measurements, the approval of same shall only be given by responsible chiefs.

4.5.3 Method of measurement

The manual has adopted the RICS Code of Measuring Practice, 5th Edition of the Royal Institute of Chartered Surveyors (Red Book), GEA (Gross External Area) for all practical purposes and reporting needs as defined in the code is used based on the purpose of valuation and method of valuation in the bank. Gross external area is used to calculate the plinth area/volume improvements. This is in the case of cost approach; the aim of the method is to know the exact figure of total replacement cost of existing building. Hence the gross external area is best suited to the approach. Whereas in the case of income method, particularly, in rental method the net internal area is conducted.

4.5.4 Building grading valuation

According to the manual four major building classification groups are considered against finishing material indicator depicting their respective class they belong: these are; Multistory commercial buildings; Three story or less residential and commercial buildings; Lower villa residential and commercial buildings and Multipurpose halls/ warehouse (grain storage facilities). Thus, to ensure proper use of the index rate of finance or collateral for the different typology of the house, building grading is an objective measure for the construction quality, materials used in completing the built structure. It is important to properly determine building grade because costs are directly related to the

quality of materials and workmanship associated. To reflect cost as related to the grade, five grade levels have been developed for Residential, Commercial (income producing), and Storage facility building. These grade levels are: Extra special, Special, Class 1 Excellent, Class 2 Very Good, Class 3 Average, Class 4 Economy Building and Class 5 Minimum Standard buildings.

There are very few buildings that come under extra special and/or special buildings. In order to differentiate them from others (class 1-5), certain indicators are used as a differentiation parameter. The first two are included to facilitate estimation in case of their appearance in practice. Indeed, there are buildings under this category in most case in Addis Ababa and the outlying towns and/or cities. As this category involves high anticipated value rates; it requires to lay down some parameters for an easy and logical determination of building class which distinguishes them from the others. In this case weight is assigned for quality demarcations to each classification based on material quality of construction details (Dashen bank manual, 2020).

4.5.5 Location value and determination of rates of land use right

4.5.5.1 Determination of plot grade of the property

The estimation of rate of Land Use right in the bank manual is such that the determination of the value of the land's location is taken from the list of unit rates in the year of assessment and the grading is based on the grade of the land as recorded in the land holding Property Certificate (LHC) is specified. In a situation where the land grade is not clearly defined on the LHC, or if the land grade is outdated and does not reflect the current level of development, the engineer can determine the land grade based on the current level of development of the area. Personal identification of the owner or borrower must be evident from the name on the transfer log stamp on the back of the LHC. However, when plot holding is acquired through lease competition, the computation of location value shall consider reaming lease period and unpaid liabilities to the Lease office. The location value of the leased property is determined by subtracting the unpaid rent from the location value calculated according to the parameters specified in the manual. The rent paid will be collected if the value of the agreed rent exceeds the value of the site. The calculation is based on the following formula:

$$\boldsymbol{Location\ value} = (\boldsymbol{Total\ Area} * \boldsymbol{Unit\ rate})\ [\ \boldsymbol{Remaining\ lease\ period}\ /\boldsymbol{Totla\ lease\ period}] - \boldsymbol{unpaid\ leas} \quad \text{Equation 6}$$

During circumstances where the unpaid sum owed to the Lease office exceeds the total location value set by the unit price index, no (zero) location value will be fixed for the plot.

According Dashen Bank Manual (2021) the steps in calculating the locational value are: Determine the area of the property; Determine the grade of the plot (plot grading), the grades are divided into five; grades are given based on the properties distance from the nearest main road, determine the road width criterion: if the width of the feeder root is less than 6 meter or internal roads of width less than 4

meter, a five percent locational value deduction factor will be considered and looking for the quality factor: based on site accessibility condition (stable asphalt road, worn asphalt road, coble stone etc...), percentage factor will be applied on the locational value.

In certain cases, land size also may be found to be unjustifiably big in size as compared to the built-up foot print area ratio. In such case, using of town planning norms and establishing accepted relationship of foot print area to the size of land are necessary. To avoid risk related to unutilized land size, the under mentioned norms are recommended for use. Any excess size beyond the required shall be subjected to progressive discount of 10% of the value for every 100m² excess land sizes to avert land value associated collateral risk. Based on the plot area of the property and cost of the civil work, the value of the location will be limited. The limit can be calculated as:

For a plot area up to 2,000m2 the location value limit will be:

= 3*CWC

For a plot area between 2,001m2 and 10,000m2 the location value limit will

= 3.5 * CWC – CWC*PA*4000

For a plot area above 10,000m2 the location value limit will be:

= CWC

Where CWC: cost of civil work before depreciation

PA: plot area

Even though the manual of the bank promised to value the properties based on the market evidence; however, practically the valuers ultimately depend on bank's guideline which is a nondiscretionary method. Thus, based on the internally prepared manual the bank estimated the selected collaterals using depreciated replacement cost method as follows;

Table 9: Assessed value of collaterals by Dashen bank

		Property				
		A	**B**	**C**	**D**	**E**
Dashen-bank result	Plot Areal(M²)	250	1,140	106.44	2,000	1,240
	Plot Grade	third	first	third	fifth	Fourth
	Distance From	250m	near	250	350	near

Main Road					
Purpose Of Valuation	collateral	collateral	mortgage	collateral	collateral
Valuation Method Used	Cost method	Cost method	Cost method	Cost method	Cost method
Building Value	20,255,384	346,707,949	2,798,201	28,818,459.44	5,600,000.
Location Value	5,872,000	35,747,978	3,512,520	0	23,446,628
Total Value	26,127,384	382,455,927	6,310,721	28,818,459.44	29,046,628
Forced Sale Value	26,127,384	382,455,927	6,310,721	28,818,459.44	29,046,628

Source: Dashen bank (2020)

As the table above portrayed, valuers in the bank have not discretion to use the market comparison and income approach. In this case the bank did not have income data for commercial collateral properties. Only depreciated replacement cost method is used to calculate the present value of the collaterals. Moreover, the plot grade of property D is fifth grade which is the least grade fixed in the manual. In this case the lease value of the land for respective lease office of Akaki Kality sub city exceeds the location value. This resulted that no location value is considered as loan security which is concluded as zero value. The market values of collaterals A, B, C, D and E determined for forced sale are 26,127,384 birr; 382,455,927 birr; 6,310,721 birr; 28,818,459.44 birr and 29,046,628 birr respectively.

4.6 Valuation of the selected collateral properties using international practice

According to EMF (2009), the main challenge concerning valuation is the lack of access to information about traded properties and missing of a general data base concerning the information about the similar and recent real properties transactions. This information is not for public access, and it is impossible to find out who, what and how has been valuated another property, so that one can compare a valuation made in the past with one made in the present. Because of this impediment, each valuer is forced to a discretion to apply another method.

Properties of similar type in a neighborhood are also not usually uniform in their characteristics such as in size, shape, and other physical and economic attributes and thus some might be superior or others might be inferior in comparison. The land holding type of properties makes a difference in their value. This is because the variations of values of properties in the same neighborhood in the case study area is due to site-specific particularly location of a property from amenities, infrastructures, planning acts

(land use regulation) and property specific characteristics such as number of stories, construction material quality and workmanship, the type of property, number of rooms, parking space, location, plot size and the like. Therefore, the true value of properties should be professionally appraised by appropriate valuation techniques. The appropriate methods selected are based on the type of properties held as collateral. In the case of the study the methods employed are direct comparison of market evidence, depreciated replacement cost and income methods. To indicate the sales(market) value of each case the appropriate valuation base is market value. Thus, five properties namely; property A(residence), property B(commercial), property C (condominium flat), property D (ware house) and property E (fuel station)) are identified and valuated as follows;

4.6.1 Valuation of residential properties

4.6.1.1 Valuation of property 'A' using market comparison method

Property A(Subject property): it is a B+G+2+T residential property located at Nefas silk around Nahom square. It has a plot area of 250m² (10*25). Its built-up area is 114m². The total floor area is 570m² (114*5 floors). It is a detached new building with good conditions constructed before 7 years (in 2015).

Comparable property 1: it is a B+G+ 2+ T residential property located at "Lebu mebrat hail" within 350 meters distance from the subject property. The plot area of the property is 260m² (10*26), and a total built up area of 156m². It has the total floor area of 624m² (156*4 floors). The typology of the property is a detached new building with good conditions constructed before 7 years (in 2017). Its sales transaction was made on December 2021. Its transaction was a price of 18,500,000 birr.

Comparable property 2: it is a G+4 residential property located at "Lebu mebrat hail" within 500 meters distance from the subject property. The plot area of the property is 240m² (10*24), and a total built up area of 114m². It has the total floor area of 570m² (114*5 floors). The typology of the property is a detached new building with good conditions constructed before 8 years (in 2014). Its sales transaction was made on February 2022. Its transaction was a price of 26,200,000 birr.

Comparable 3: it is a G+3+T residential property located at "Lebu mebrat hail" within 180 meters distance from the subject property. The plot area of the property is 240m² (10*24), and a total built up area of 168m². It has the total floor area of 672m² (168*4 floors). The typology of the property is a detached new building with good conditions constructed before 6 years (in 2016). Its sales transaction was made on May 2022. Its transaction was a price of 31,400,000 birr.

According to the site inspection of the study both the subject and comparable properties (1, 2, and 3) are similar in location which shares the following common attributes: they are located at the frontage of local streets. Also have regular parcel shape and gentle slope. The improvements are constructed with similar construction material and workmanship by hollow concrete block with painted and plastered (internal partitions) and quartz (external walls). They have 12 rooms with available (some

also in connecting stage) utilities such as water, sewerage line, and electricity. The sites are paved and have parking space, septic tank, and a water tanker. The land holding type of properties is lease hold acquisition.

Table 10: General information about the subject (property A) and comparable properties

	Location	Area(m^2)	Built-up area(m^2)	Age	height	Transaction condition	Transaction date	Transaction price(birr)
Comparable-1	Nefasilk-Lebu mebrat hail	260	156	7	B+G+2+T	Normal	December2021	18,500,000
Comparable-2	Nefasilk-Lebu mebrat hail	240	114	8	G+4	Normal	February 2022	26,200,000
Comparable-3	Nefasilk-Lebu mebrat hail	240	168	6	G+3+T	Normal	May 2022	31,400,000
Subject property	Nefasilk-Lebu Nahom square	250	114	7	B+G+2+T	Normal	August 2022	?

Source: Field survey (2022)

Table 11: Market price adjustment made for property A

1. Adjustment of Sale Price by Transaction Date				
	Subject property	comparable 1	comparable 2	comparable 3
Transaction Price	?	18,500,000.00	26,200,000.00	31,400,000.00
Transaction Date	August, 2022	December,2021	February, 2022	May, 2022
Difference In Months		9	7	3
Monthly Price Growth (%)	0.078			
Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73
2. Adjustment of sale Price by location				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73

Location		Similar	Similar	Similar
Required Adjustment		0	0	0
Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73
3. Adjustment of sale Price by transaction condition				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Price		36,369,771.80	44,323,354.08	39,335,613.73
Transaction Condition		Normal	Normal	Normal
Required Adjustment		0	0	0
Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73
4. Adjustment of sale Price by age				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73
Age	7	7	8	6
Economic Life		30	30	30
Annual Depreciation Rate		0.0333	0.0333	0.0333
Annual Depreciation		616,050.00	872,460.00	1,045,620.00
Required Adjustment		0	(872,460.00)	1,045,620.00
Adjusted Sale Price		36,369,771.80	43,450,894.08	40,381,233.73
5. Adjustment of Sale Price by Built-up Area				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		36,369,771.80	43,450,894.08	40,381,233.73
Built-Up Area	114	156	114	168
Required Adjustment		4,011,461.94	0	3,069,660.34
Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08
6. Adjustment of Sale Price by land holding type				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08
Land Holding Type	Lease	Lease	Lease	Lease

Required Adjustment		0	0	0
Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08

7. Net adjustment				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08
Plot Area(M2)	250	260	240	240
Adjusted Sale Price/M²		155,312.44	181,045.39	181,045.39
Average Sale Price/M²	172,467.74			
Indicated Market Value of Subject Property	43,116,935.12			

source: Field survey (2022)

Adjustment with transaction date: According to the site inspection of the study the researcher recorded market price for three months. Based on the data the study recorded the variations of market price in the neighborhood near to property A (subject property). The monthly growth rate for the B+G+2+T residence is 7.8% (*see table 11 and 12*). The adjusted sales price is computed using excel function=FV(rate;nper;pv) from this the rate is sales price growth, *nper* is the number of time indicating the variation of prices in months, and *pv* represents the present value(sales price of the comparable property).

Therefore, the adjusted transaction(sales) price in transaction date is: =-FV(7.8%,9,0,18500000) for comparable property 1; = FV(7.8%,7,0,26200000) for the comparable 2 and =-FV(7.8%,3,0,31400000) for comparable 3.

Table 12: Adjustment of sale by date of transaction

1. Adjustment of Sale Price by Transaction Date				
	Subject property	comparable 1	comparable 2	comparable 3
Transaction Price	?	18,500,000.00	26,200,000.00	31,400,000.00
Transaction Date	August, 2022	December,2021	February, 2022	May, 2022
Difference In Months		9	7	3
Monthly Price Growth (%)	0.078			
Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73

source: Field Survey (2022), And computed in Microsoft Excel

Adjustment by location: According to the *table 13* below both the subject & comparable properties are located in a similar locality, nearly similar slope, frontage to Local Street and regular shape of plots. The required sales price adjustment is made in excel function as:

=IF(C12="Similar",0, (C12-P12)) (for comparable 1); =IF(D12="Similar",0,(D12-D12)) for comparable 2 and =IF(E12="Similar",0,(E12-E12)) (for comparable 3). Therefore, the adjusted sales price with location =C12+C8 (for comparable 1); =D12+D8 (for comparable 2) and =E12+E8 (for comparable 3).

Table 13: Adjustment of sale by location

2. Adjustment of sale Price by location				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73
Location		Similar	Similar	Similar
Required Adjustment		0	0	0
Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73

source: Field Survey (2022), And computed in Microsoft Excel

Adjustment by transaction condition: according to the property data from the property owners and legal representatives of owners, all the sales transactions are made at an arm's length without any special relationship between the buyer and the seller.

As the *table 14* below indicated, the required adjustment-factor:=IF(C18="Normal",0, (C17-C17)) (for comparable 1=IF(D19="Normal",0,(D18-D18)) for comparable 2 and =IF(E19="Normal",0,(E18-E18)) for comparable 3. Therefore, the adjusted sales price with transaction condition ==C17+C18 (for comparable 1); =D17+D18 (for comparable 2) and =E17+E18 (for comparable 3).

Table 14: Adjustment of sale by transaction condition

3. Adjustment of sale Price by transaction condition				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Price		36,369,771.80	44,323,354.08	39,335,613.73
Transaction Condition		Normal	Normal	Normal
Required Adjustment		0	0	0
Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73

source: Field Survey (2022), And computed in Microsoft Excel

Adjustment of sales price by age: According to the data from owners and representatives of owners, the effective age of the comparable property one is 7 years; comparable two 8 years and comparable 3 is 6 years. Data from international practice and building professionals the economic life (service life) of the building frequently is 30 years. Therefore, depreciation is computed by age-life method: depreciation of improvement (%) = (effective age/service life (economic life) of the building) *100. Thus, according to the *table 15* the annual depreciation rate for comparable property 1= (7/30)/7; = (8/30)/8 (comparable 2) and = (6/30)/6 (comparable 3). Also, the *amount of annual depreciation* = 18,500,000*3.33% (for comparable property 1); and = 26,200,000*3.33% (for comparable property 2)

and 31,400,000*3.33% (for comparable 3). *The required adjustment* is calculated as follows: First multiplying age differences between the subject and comparable property by annual depreciation rate of the comparable properties. Therefore, required adjustment= =IF(C24=B24,0,-(C24-B24)*C27) which is =IF(7=7,0,-(7-7)*616,050(comparable 1); =IF(D24=B24,0,-(D24-B24)*D27) which is =IF(8=7,0,-(8-7)*872,460 (comparable 2) and =IF(E24=B24,0,-(E24-B24)*E27) which is =IF(6=7,0,-(6-7)*1,045,620 (comparable 3). Finally, the adjusted sales price with age: 36,369,771.80+0(comparable 1); 44,323,354.08+ (-872,460) (comparable 2) and 39,335,613.73+ 1,045,620 (for comparable 3).

Table 15: Adjustment of sale Price by age

4. Adjustment of sale Price by age				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		36,369,771.80	44,323,354.08	39,335,613.73
Age	7	7	8	6
Economic Life		30	30	30
Annual Depreciation Rate		0.0333	0.0333	0.0333
Annual Depreciation		616,050.00	872,460.00	1,045,620.00
Required Adjustment		0	(872,460.00)	1,045,620.00
Adjusted Sale Price		36,369,771.80	43,450,894.08	40,381,233.73

source: Field Survey (2022), and computed in Microsoft Excel

Adjustment by buildup area: if there is similarity between the built-up area of the subject and comparable, there is no need of adjustment on the sales price. However, if there is a difference in built-up areas among subject and comparable properties, there will be made a subtraction of price ; in this case previously adjusted price of comparable two – comparable 1 and (comparable 2-comparable3). This is because there is no difference in built-up area between subject property and comparable 2.

As the *table 16* portrayed, the required adjustment: =IF(156=114,0,-(36,369,771.8-40,381,233.73)) which is 36,369,771.80+4,011,461.94 (for comparable1); =IF(114=114,0,-(43,450,894.08-36,369,771.80)) which is $40,381,233.73+0 (for comparable2) and =IF(168=114,0,-(43,450,894.08-40,381,233.73)) which is $40,381,233.73+ 3,069,660.34(for comparable 3).

Table 16: Adjustment of sales price by built-up area

5. Adjustment of Sale Price by Built-up Area				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		36,369,771.80	43,450,894.08	40,381,233.73
Built-Up Area	114	156	114	168
Required Adjustment		4,011,461.94	0	3,069,660.34
Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08

source: Field Survey (2022), and computed in Microsoft Excel

Adjustment by land holding system: according to the owners the land acquisition type of both properties (subject and the comparable) is through lease basis. This indicated that none of them are different in land use right and legal easements. As the properties are similar in locality; the plot grade according to the structure plan of the city is similar. Thus, the land lease price per square meter is equal since the plot grade is similar. Therefore, the study argued that there are no differences in their land use right; and there is no adjustment for the land holding type of the properties.

Table 17: Adjustment of sale price by land holding type

6. Adjustment of Sale Price by land holding type				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08
Land Holding Type	Lease	Lease	Lease	Lease
Required Adjustment		0	0	0
Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08

source: Owners and representatives of owners in field Survey (2022), and computed in Microsoft Excel

Net adjustment: the sales price adjustment has been established for comparable properties to reflect what prices that the subject property would sell at the normal transaction condition on date of valuation (August 2022). As a result, the researcher arrived at the opinion of value of the subject property. The adjusted sales price per m² is calculated from the average adjusted prices of comparable prices =40,381,233.73 birr for comparable 1; 43,450,894.08 birr for comparable 2 and 43,450,894.08 birr for comparable 3*(see table 18).* The adjusted price/m² of subject is calculated as AVERAGE (40,381,233.73: 43,450,894.08: 43,450,894.08). Finally, the adjusted sales price of the subject property is 43,116,935.12 birr.

Table 18: Net adjustment of sales price

7. Net adjustment				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08
Plot Area(M2)	250	260	240	240
Adjusted Sale Price/M²		155,312.44	181,045.39	181,045.39
Average Sale Price/M²	172,467.74			
Indicated Market Value of Subject Property	43,116,935.12			

source: Field Survey (2022), and Computed in Microsoft Excel

4.6.1.2 Valuation of property A using cost method

The study assessed the value of the subject property based on the market data from closely comparable property commonly known as abstraction. The process of abstraction method of valuation of a given property is undertaken as follows: sales of houses in the same neighborhood on lots with similar characteristics are obtained; an estimate of the cost new of the improvements is made; an amount is deducted from cost new for depreciation; determining the depreciated unit value of comparable; multiplying the depreciated unit value of comparable by square footage (built up area) of subject; the total depreciated cost of the improvements is deducted from the selling price of the comparable property; the difference represents an approximation of land value for the comparable property; then calculating the square unit value of the comparable property; finally multiplying the unit value of the comparable property by the plot area of the subject property; after all the result is the indicated land value of the appraised property(subject property).

Therefore, the market value of property (subject) is sum of land and depreciated value of the subject property. Which is; MV= Lv +Value(improvement)…… Equation 7

According to the general information in *table 15* the age of comparable 3 is the youngest of other properties the study selected it as a comparative to calculate the average cost per m². To index the cost of replacement new of comparable 3, its historic cost of construction data is collected from the owner (field survey, 2022). According to building engineers, the economic life of the building is 30 years. The effective age of building is 6 years. The annual depreciation rate is 3.33 % (*see table 11 and 15*).

$DV = P\left(\frac{100-rd}{100}\right)^{n}$ …… Equation 8

DV=9,300,000,000(1-0.0333)6

=7,589,851.17birr

The expected appreciation of construction material price on the date of appraisal is 31.5 % (CSA, 2022). Therefore, the total appreciation value of the building is= (DV*rate of appreciation); =2,390,803.12 birr. By adding the total appreciation to depreciated value, The Replacement Cost New (prime cost) = P=9,980,654.29 birr. The unit replacement cost of comparable 3 =9,980,654.29birr/168m² which= 59,408.65 birr. The land value= sales price (comparable 3)-the replacement cost new (comparable 3) which is (31,400,000-9,980,654.29=21,419,345.71 birr). Thus, the land value per square meter is =land value (comparable 3)/plot area (comparable 3) which is 21,419,345.71birr/240m²=89,247.27 birr.

According to the unit replacement cost of comparative evidence the cost of replacement of subject property is =unit cost (comparable 3) *built-up area (subject) which = 59,408.65 birr/m²*114m². Therefore, the replacement cost new (subject)=6,772,586 birr. The land value of subject property=unit value per m² (comparable 3) *plot area (subject) which is 89,247,.27birr/m²*250m²=22,311,817.5 birr.

Finally, the adjusted market value of subject property; =land value (subject) + replacement cost new(subject) which =22,311,817.5 birr+6,772,586 birr. These resulted 29,084,403.5birr.

However, as the age of property A increases, the improvement value decrease in the collateral years. The adjusted market value of property A became 29,084,403.50-birr, 27,179,633.63 birr, 26,274,551.83-birr, 25,399,609.26 birr and 24,553,802.27 birr in the first five years. As the figure 7 below indicated, the depreciated value of subject decreased as the age of the property increased.

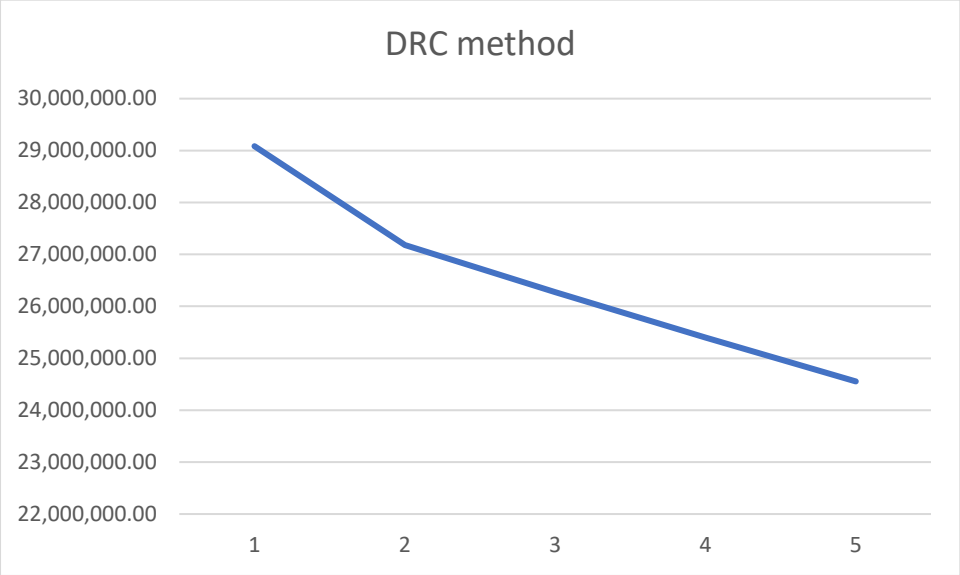


Figure 7: Market value of property A using DRC method

According to the EBA manual (2015) the two methods namely cost approach and income approach are relevant to predict the market value of residential properties for loan security. However, as the time of collateral increases the value of improvement is not positive every year (see fig.7). This is due the fact that unless the subject property is a newly maintained property, it might lose its exchange price. On the other hand, as the age of the property increase the price of properties increases rapidly in its highest and best use (*see table 11 and 12*). This indicated that compared to cost approach, the best suited method of residential property valuation for collateral purpose is market comparison approach.

4.6.1.3 Valuation of property 'A' using income method

For property 'A', the study uses the income capitalization approach if the property under valuation is expected to generate future income and its sale price is predictable. In the case of this study the researcher collected data about the income and expense of the property from owners and legal representatives of owners (both subject and comparable properties). The estimation of values for both properties (subject and comparable) is conducted by the net internal area of properties. And the overall rate is taken according to the sales of the comparable as follows:

Table 19: Cap rate of comparable properties

Income Data	Comparable 1	Comparable 2	Comparable 3

Rentable Area	502	468	513
Average Price/M²/(Birr)	99.60	74.79	103.31
Income/Month (Birr)	50,000.00	35,000.00	53,000.00
Potential Gross Rent Income (PGI)/Year	600,000.00	420,000.00	636,000.00
Vacancy And Collection Lose	0%	0%	10%
Effective Gross Income/Year	600,000.00	420,000.00	572,400.00
Operating Expense (Oexp)/Year	129,000	57,600	54,000.00
Net Operating Income/Year	471,000.00	362,400.00	518,400.00
Sales Price	18,500,000	26,200,000	31,400,000
Capitalization Rate (%)	3%	1%	2%
Average Cap Rate		2%	

Source: Owners of comparable (2022) and computed using Microsoft excel

The study estimated the market value of the subject property using income capitalization follows:

Table 20: Market price of property A (subject)using income approach

Rentable Area	482
Average Price/M²/(Birr)	62
Income/Month (Birr)	30,000.00
Potential Gross Rent Income(PGI)/Year	360,000.00
Vacancy And Collection Lose	0%
Effective Gross Income/Year	360,000.00
Operating Expense Per Month	7,954.00
Operating Expense (Oexp)/Year	95,448.00
Net Operating Income/Year	264,552.00
Overall Rate	2%
Indicated Market Value	13,227,600.00

source: Field survey (2022) and computed in Microsoft excel

The *table 20 and 21* indicated that the overall rate is lower (2%) which indicated that the lower the overall caprate means the property investment needs long period of time to recover its invested capital. This also indicated that in the case of residence collateral, yields from rents converted to present value of comparable properties couldn't dictate their market price. The study assumed that the owner of the property should not make any maintenance to the existing improvements of the property; thus, caprate and cashflows should grow in a steady amount. So, if the cashflows and caprate are kept steady change, the *table 21* indicated that compared to market comparison method, in the case of residence collateral, yields from rents converted to present value of property 'A' couldn't dictate their market price.

4.6.2 Valuation of Commercial Properties

4.6.2.1 Valuation of property B using market comparison approach

Property B (Subject property): it is a 2B+G+10 commercial Building located around "Meskel square". It has a plot area of 1,140m² (27*42). The built-up area of the building is 635m². It is a detached new building with moderate conditions constructed before 11 years in 2011. The property has no obsolescence for the existing function of the building (it fits its own highest and best use). The type of land holding is leasing basis for 40 years. The purpose of valuation undertaken by the bank is for collateral.

Comparable property 1: it is a 2B+G+11 commercial property located at "Meskel square" within 900 meters distance from the subject property. The plot area of the property is 1200m² (26.67*45), and a total built up area of 820m². It has similar locality and land grade with subject property. The typology of the property is a detached new building with excellent conditions constructed before 6 years (in 2016). Its sales transaction was made on May 2022. Its transaction was a price of 390,000,000 birr.

Comparable property 2: it is a B+G+10+T an income producing property located at "Wollosefer to Bole Michael Road" within 2000 meters (2kilometers) distance from the subject property. The plot area of the property is 1036m² (24.6*42), and a total built up area of 635m². The typology of the property is a detached new building with excellent conditions constructed before 8 years (in 2014). Its sales transaction was made on March 2022. Its transaction was a price of 510,000,000 birr.

According to the site inspection of the study both the subject and comparable properties (1 and 2) are relatively in similar location which shares the following common attributes: they are high class of quality depicted to their finishing material quality and workmanship. They are located at the frontage of a 40m width asphalt road street. They also have regular parcel shape and gentle slope. The improvements are constructed with similar high class construction material and workmanship by hollow concrete block with painted and plastered (internal partitions) and aluminum (external walls). They have 13 floors each including basements. They have available utilities such as water, sewerage line, and electricity. The sites are paved and have parking space, septic tank and a water tanker.

Table 21: Market comparison adjustment of a commercial property (property B)

1. Adjustment of Sale Price by Transaction Date			
	Subject property	comparable 1	comparable 2
Transaction Price		390,000,000	510,000,000
Transaction Date	August, 2022	May-22	Mar-22
Difference In Months		3	6
Monthly Price Growth		2.49%	2.33%
Adjusted Sale Price		(419,864,432.62)	(585,582,407.51)
2. Adjustment of Sale by Location			
	Subject property	comparable 1	comparable 2

Previously Adjusted Sale Price		(419,864,432.62)	(585,582,407.51)
Location	similar	similar	similar
Required Adjustment		0	0
Adjusted Sale Price		(419,864,432.62)	(585,582,407.51)
3. Adjustment of sale by transaction condition			
	Subject property	comparable 1	comparable 2
Previously Adjusted Price		(419,864,432.62)	(585,582,407.51)
Transaction Condition		normal	normal
Required Adjustment		0	0
Adjusted Sale Price		(419,864,432.62)	(585,582,407.51)
4. Adjustment of sale by age			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		(419,864,432.62)	(585,582,407.51)
Age (Years)	11	6	8
Economic Life		30	30
Annual Depreciation Rate		3.33%	3.33%
Annual Depreciation		13,916,107	19,499,894
Required Adjustment		69,580,535.00	58,499,682.51
Adjusted Sale Price		(350,283,897.62)	(527,082,725.00)
5. Adjustment of Sale Price by Built-up Area			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		(350,283,897.62)	(527,082,725.00)
Built-Up Area	635	820	635
Required Adjustment		(178,762,145.46)	0
Adjusted Sale Price		(529,046,043.08)	(527,082,725.00)
6. Adjustment of Sale Price by land holding type			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		(529,046,043.08)	(527,082,725.00)
Land Holding Type	LEASE	LEASE	LEASE
Required Adjustment		0.00	0.00
Adjusted Sale Price		(529,046,043.08)	(527,082,725.00)
7. Net Adjustment			
	Subject property	comparable 1	comparable 2
Previously adjusted sale price		(529,046,043.08)	(527,082,725.00)
Plot Area(M2)	1,140.00	1,200.00	1036.00
Adjusted Sale Price/M^2		(440,871.70)	(508,767.11)

Average Sale Price/M²	(474,819.41)
Indicated Market Value of Subject Property	(541,294,122.64)

Source: Field survey (2022) and computed in Microsoft excel

As the *table 21* indicated, market adjustments by transaction date, location, transaction condition, age, built-up area, land holding type are similar procedures with the adjustments applied for residential properties (property A). The market value of property B is 541,294,122.64 Ethiopian birr applicable only on the date of appraisal (August 2022). According to the site inspection of the study the researcher recorded market price for three months. Based on the data the study recorded the variations of market price in the neighborhood near to property B (subject property). Thus, the prices changing according to growth rate recorded by this study is 2.49% per month. Furthermore, the monthly growth rate (2.49%) is applicable only for commercial properties in the study area of the subject property, Meskel square.

4.6.2.2 Valuation of property "B'' using depreciated replacement Cost method

The estimation of market value for subject property in cost method is also similar to methods employed for residential property (property A). According to the site inspection, comparable property one is the youngest compared to the comparable 2; which is closely comparative to calculate the average cost per m². To index the cost of replacement new of comparable 1 for subject property, its historic cost of construction data is collected from the owner. According to the building permit BoQ its original cost of construction is 121.43 million birr (field survey, 2022). The economic service life of the comparable one is 30 years. The effective age of building is 11 years. The annual depreciation rate is 3.33 % (*see table 20*).

$DV = P\left(\frac{100-rd}{100}\right)^{n}$; ..... Equation 9

DV=depreciated value; rd=depreciation rate, 3.33% for 30 years; n= building age

DV=121,430,000(1-0.0333)11

=83,663,282.42 birr

The expected appreciation of construction material price on the date of appraisal is 31.5 % (CSA, 2022). Therefore, the total appreciation of value of the building is= (DV*rate of appreciation); =26,353,933.96 birr. The replacement cost new (prime cost) = P= (83,663,282.42 +26,353,933.96 =110,017,216.38 birr). The unit replacement cost of comparable one =110,017,216.38 birr/820m² (built-up area of comparable 1) which= 134,167.34 birr. The land value= sales price (comparable 1)-the replacement cost new (comparable 1) which is (390,000,000-110,017,216.38 =279,982,783.62 birr). Thus, the land value of comparable one per square unit is =land value (comparable 1)/plot area (comparable 1) which is 279,982,783.62 birr /1,200m²=233,318.98 birr/m².

According to the unit replacement cost of comparative one, the cost of replacement of subject property is =unit cost (comparable 1) *built-up area(subject); which is = 134,167.34 birr/m²*635m². Therefore, the replacement cost new(subject)=85,196,260.9 birr. The land value of subject property=unit value per m²(comparable 1)*plot area(subject) which is 233,318.98 birr/m²*1,140m²=265,983,637.2 birr. Finally, the adjusted market value of subject property; =land value (subject) + replacement cost new(subject) which =265,983,637.2 birr+85,196,260.9 birr. These resulted 351,179,898.1 birr.

As the *table 22* below indicated, the value of property B based on the reproduction cost of replica is 351,179,898.1 birr. This revealed that an owner couldn't pay more for property B than constructing another equivalent property of equal utility in 351,179,898.1 birr. However, as the property is aged its depreciated value decreases by 3.33% per year.

Table 22: Sale value of property B using Depreciated replacement cost

Year	DRC Method of valuation
1	351,179,898
2	328,180,737
3	317,252,318
4	306,687,816
5	296,475,112
6	286,602,490.54
7	277,058,627.60
8	267,832,575.30
9	258,913,750.55
10	250,291,922.65

Source: Owner of Comparable Property One (2022) and computed in Microsoft excel

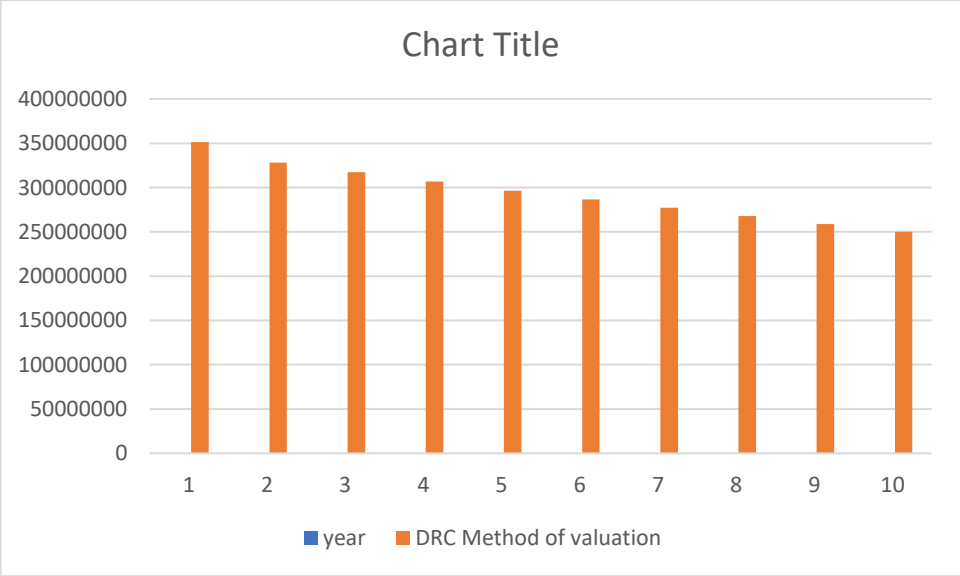


Figure 8: Market value of property B using DRC method

Source: Field survey (2022)

According to the fig.8 the graph indicated that improvement value of property B decreases through time. Its market value became 351,179,898-birr, 328,180,737-birr, 317,252,318 -birr, 306,687,816 birr and 296,475,112 birrs for the first five consecutive years collateral.

4.6.2.3 Valuation of property "B" using income method

The study valued property B based on the income data collected from property management office of the subject property. The subject produced an effective gross income of 34,763,827 birr with a net operating income of 33,298,010 birr at the first year. It also produced 21,669,722 birrs after tax cashflows in the first year. The market cap rate determined by the Awash bank is 6%.

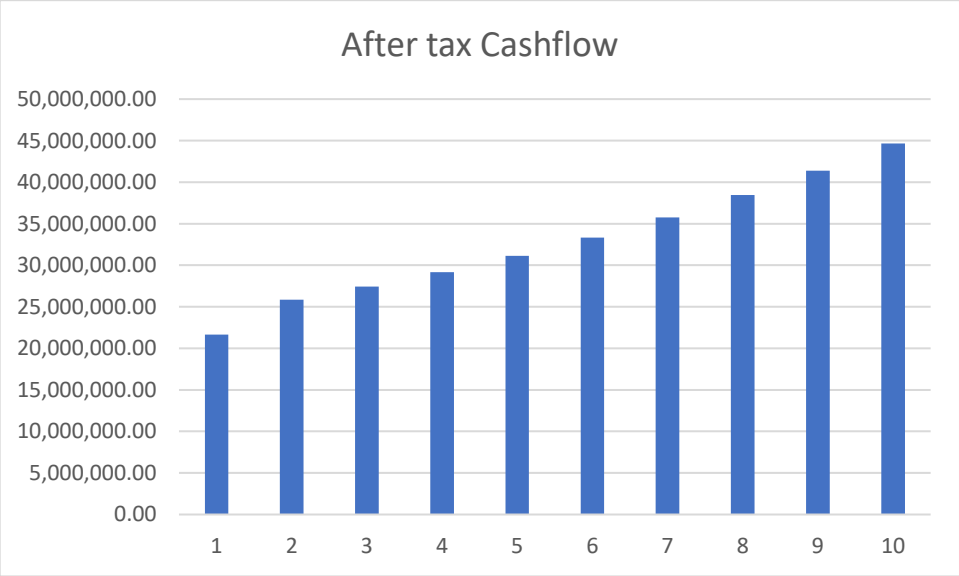


Figure 9:After tax cashflows of property B

Source: Property Management Office of The Subject Property (2022) and computed in Microsoft excel

According to the discount cashflow model, the value of property B in the first five consecutive years are 361,162,034birr, 417,297,468birr, 435,370,095birr, 456,040,485birr and 479,434,341birr. This indicated that when the age of the property increases, then cashflows could get increased; thus, the value using income approach also increased in the collateral years.

Table 23: Sale value of property B using income method

Year	Income Method
1	361,162,034
2	417,297,468
3	435,370,095
4	456,040,485
5	479,434,341

6	505,684,763
7	534,932,769
8	567,327,829
9	603,028,433
10	642,202,682

Source: Property management office of the subject property (2022) and computed in Microsoft excel

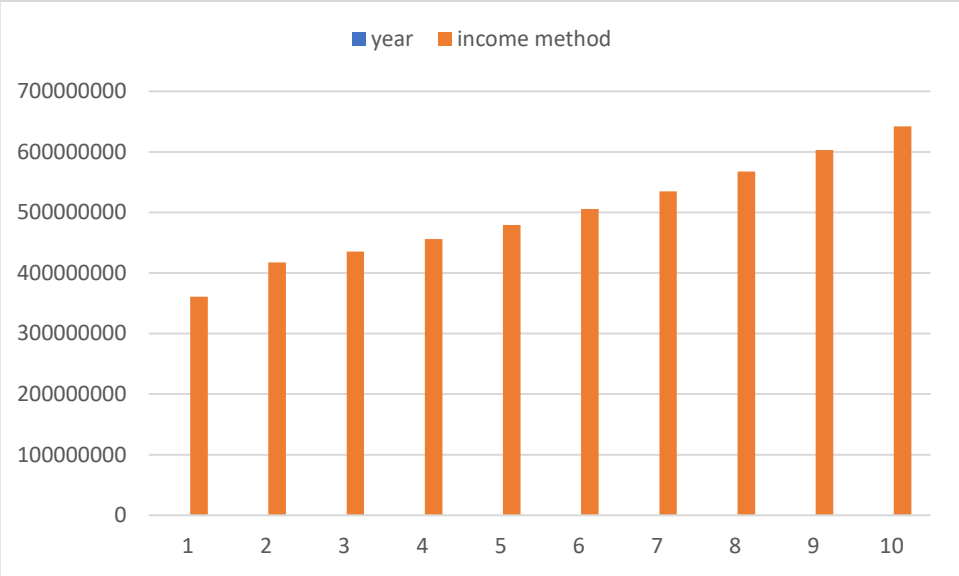


Figure 10:Market value of property B using discount cashflow method

Source: Property Management Office of Subject Property (2022) and computed in Microsoft excel

According to fig. 10 the graph indicated that the value of property B can secure the bank from loan defaults. This is because the property can easily recover the invested capital of the property and capable to secure loan from defaults. Finally, the study argued that in the case of commercial property the discount cashflow valuation technique of income approach can predict the sale price of the subject.

Table 24: Market value of property B based on DRC and income method

Year	DRC Method of valuation	Discount cashflow
1	351,179,898	361,162,034
2	328,180,737	417,297,468
3	317,252,318	435,370,095
4	306,687,816	456,040,485
5	296,475,112	479,434,341
6	286,602,490.54	505,684,763
7	277,058,627.60	534,932,769
8	267,832,575.30	567,327,829
9	258,913,750.55	603,028,433

10	250,291,922.65	642,202,682

Source: Property Management Office of Subject Property (2022) and computed in Microsoft excel

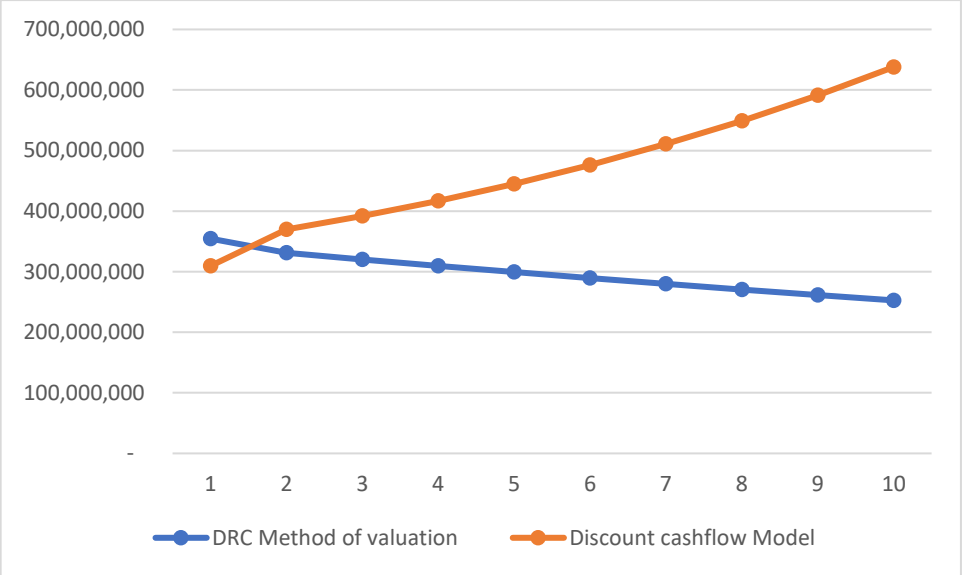


Figure 11: Income versus DRC method valuation of property B

Source: field survey (2022)

According to the graph (fig. 11) when the time increases the value from the income approach will be higher than the value using depreciated replacement cost method. However, as age of the property increase the improvement of the property become depreciated. This would adversely decrease the utility of existing use of the property. Thus, the study argued that value of the property using the depreciated replacement cost method could not indicate exchange price of subject at the open market. Therefore, in the case of commercial properties, the value result using market comparison and income method are more appropriate to indicate the market price than depreciated replacement cost.

4.6.3 Valuation of condominium flats

4.6.3.1 Valuation of property C using market comparison

Property C (Subject property): it is a condominium flat mortgaged for the bank's staff. It is located around a prominent landmark "summit safari". It is located at the first floor of the common residence block. It is a three-bed room residence. The plinth area of the house unit is 106.44m². It is a detached new building with moderate conditions of a newly constructed block. The type of land holding is freehold basis. The bank estimated the collateral on August 2022. The purpose of valuation undertaken by the bank is for mortgage lending.

Comparable property 1: it is a condominium housing unit sold at the open market. It is located around "summit safari" with a distance of 50m from the block of the subject property. It is a two-bedroom residence flat. It has a total gross internal area of 114.22m². It is located at 3rd floor of the communal block. It is a detached new building with moderate conditions of a newly constructed block. The type

of land holding is freehold basis. The property was transacted on May 2022. The transaction made with price of 7,500,000birr.

Comparable property 2: it is a condominium flat sold at the open market. It is located around "summit safari" with a distance of 100m from the block of the subject property in a similar project site. It has a three-bed room residence flat. It is located at 1st floor of the communal block. The type of land holding is freehold basis. The property was transacted on May 2022. The transaction made with price of 8,200,000birr.

Comparable property 3: it is a condominium flat sold at the open market. It is located around "summit safari" with a distance of 0m from the subject property in a similar project site. It has a three-bed room flat used as residence. It is located at 3st floor of similar block. The property was transacted on April 2022. The transaction made with price of 6,700,000birr.

According to the site inspection of the study both the subject and comparable properties (1, 2 and 3) are similar in location which shares the following common attributes: they are located at closely to each other in a similar neighborhood. The improvements are constructed with similar construction material and workmanship by hollow concrete block with painted (internal partitions and external walls). They have available (some also in connecting stage) utilities such as water, sewerage line and electricity. The sites are paved and have common parking space, septic tank, and a water tanker.

Table 25: General information about the subject (property C) and comparable properties

	Location	Built-up area(m^2)	Age	height	No. of bedroom	Transaction condition	Transaction date	Transaction price(birr)
Comparable-1	Summit-Safari	114.22	9	Third floor	2	Normal	May 2022	7,500,000
Comparable-2	Summit-Safari	106.44	9	First floor	3	Normal	May 2022	8,200,000
Comparable-3	Summit-Safari	106.44	9	Third floor	3	Normal	April 2022	6,700,000
Subject property	Summit-Safari	106.44.	9	First floor	3	Normal	August 2022	?

Source: Brokers in field survey (2022)

Table 26: Sale price adjustment for property C

1. Adjustment of Sale Price by Transaction Date				
	Subject property	comparable 1	comparable 2	comparable 3
Transaction Price	?	7,500,000	8,200,000	6,700,000

Transaction Date	August, 2022	May, 2022	May, 2022	April, 2022
Difference In Months		4	4	5
Monthly Price Growth	2.33%			
Adjusted Sale Price		8,223,812	8,991,368	7,517,781
2. Adjustment of sale by location				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,223,812	8,991,368	7,517,781
Location	similar	similar	similar	similar
Required Adjustment		0	0	0
Adjusted Sale Price		8,223,812	8,991,368	7,517,781
3. Adjustment of sale by transaction condition				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Price		8,223,811.74	8,991,367.503	7,517,781.0
Transaction Condition		Normal	Normal	Normal
Required Adjustment		0	0	0
Adjusted Sale Price		8,223,812	8,991,368	7,517,781
4. Adjustment of sale by age				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,223,812	8,991,368	7,517,781
Age	9	9	9	9
Economic Life		30	30	30
Annual Depreciation Rate	3.33%	3.33%		
Annual Depreciation		273,852.93	299,412.54	250,342.11
Required Adjustment		0	0	0
Adjusted Sale Price		8,223,811.74	8,991,367.50	7,517,781.06
5. Adjustment of Sale Price by Built-up Area				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,223,811.74	8991367.503	7517781.055
Built-Up Area	106.44	114.22	106.44	106.44
Required Adjustment		767,555.76	0	0
Adjusted Sale Price		8,991,367.50	8,991,367.50	7,517,781.06

6. Adjustment of Sale Price by floor height				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,991,367.50	8,991,367.503	7,517,781.0
Floor Number	First floor	Third floor	First floor	Third floor
Required Adjustment		1,473,586.45	-	1,473,586.45
Adjusted Sale Price		10,464,953.95	8,991,367.50	8,991,367.50

7. Adjustment of Sale Price by Number of Bedrooms				
	subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		10,464,953.95	8,991,367.50	8,991,367.50
Number Of Bedrooms	3	2	3	3
Required Adjustment		-1473586.45	0	0
Adjusted Sale Price		8,991,367.50	8,991,367.50	8,991,367.50

8. Net Adjustment				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,991,367.50	8,991,367.50	8,991,367.50
Plot Area(M2)	106.44	114.22	106.44	106.44
Adjusted Sale Price/M²		78,719.73	84,473.58	84,473.58
Average Sale Price/M²	82,555.63			
Indicated Market Value of Subject Property	8,787,221.00			

Source: Brokers in field survey (2022).

According to the site inspection of the study the researcher recorded market price for three months. Based on the data the study recorded the variations of market price in the neighborhood near to property C (subject property). Therefore, the researcher reached at the land price (location value) changes by 2.33% per month (*see table 27*). The monthly price growth (2.33%) is only applicable for condominium flats (housing units) in locations of subject property- "Summit-Safari".

Adjustment of salle price by transaction date: The sales of comparable 1 and 2 were transacted 4 months ago on May 2022 and comparable 3 was on April 2022 which are inferior to the subject property. Their sales price was 7.5million birr, 8.2million birr and 6.7million birr respectively. The monthly location value changes approximately by 2.33%. Therefore, if the sales transaction were after 4 months (for comparable 1&2) and 5 months (for comparable 3) (on August 2022), each price of comparable (comparable 1, 2&3) would be 8,223,812-birr, 8,991,368 birr and 7,517,781 respectively. The study adjusted the sales price as follows:

First the monthly growth rate for the condominium flat is 2.33% (*see table 27*). The adjusted sales price is computed using excel function=FV (rate;nper;pv) from this the *rate* is sales price growth, *nper* is the number of time indicating the variation of prices in months, and *pv* represents the present value(sales price of the comparable property). Therefore, the adjusted transaction(sales) price in transaction date is: =-FV(2.33%,4,,7.5million) for comparable property 1, =-FV(2.33%,4,,8.2million) for the comparable 2 and =-FV(2.33%,5,,6.7miollion) for comparable 3.

Table 27: Adjustment of sale price by transaction date

1. Adjustment of Sale Price by Transaction Date				
	Subject property	comparable 1	comparable 2	comparable 3
Transaction Price	?	7,500,000	8,200,000	6,700,000
Transaction Date	August, 2022	May, 2022	May, 2022	April, 2022
Difference In Months		4	4	5
Monthly Price Growth	2.33%			
Adjusted Sale Price		8,223,812	8,991,368	7,517,781

Source: Field Survey (2022), and computed in Microsoft Excel

Adjustment of sale price by location: Based on the *table 28* below both properties (subject and comparable properties) have similar locality (neighborhood, distance to the major road etc). None of them are inferior or superior to the subject property. Thus, there would not require adjustment to the sale price of comparable properties to the subject because of location character.

Table 28: Adjustment of sale price by location

2. Adjustment of sale by location				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,223,812	8,991,368	7,517,781
Location	similar	similar	similar	similar
Required Adjustment		0	0	0
Adjusted Sale Price		8,223,812	8,991,368	7,517,781

Source: Field Survey (2022), and computed in Microsoft Excel

Adjustment of sale price by transaction condition: Based on the *table 29* below the owners of properties revealed that sales transactions of comparable properties are made under normal conditions without special relationships between seller and buyer. The sales are transacted at the open market with intermediation of local brokers between a willing buyer and seller of the properties.

Table 29:Adjustment of sale price by transaction condition

3. Adjustment of sale by transaction condition				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Price		8,223,811.74	8,991,367.503	7,517,781.0
Transaction Condition		Normal	Normal	Normal
Required Adjustment		0	0	0
Adjusted Sale Price		8,223,812	8,991,368	7,517,781

Source: Field Survey (2022), and computed in Microsoft Excel

Adjustment of sale price by age: According to the owners the effective age of the properties are similarly 9 years (*see table 30*). This was because both subject and comparable properties are similar housing project sites constructed at a time by Addis Ababa city housing development agency in 2013 around "Summit Safari". For example, both the comparable 3 and subject property are built in a similar footing of a block whose entire components are equal age. Therefore, there would not require adjustment of sale price of comparable to the subject property because of age of improvement.

The annual depreciation of comparable 1, 2 and 3 are 273,852.93-birr, 299,412.54 birr and 250,342.11 birr respectively. Thus, *the required adjustment* is calculated as follows: First multiplying age differences between the subject and comparable property by annual depreciation rate of the comparable properties. Thus, *the required adjustment* is= IF(9=9,0,-(9-9)*273,852.93 for comparable property 1 and =IF(9=9,0,-(9-9)* 299,412,.54) for comparable property 2 and =IF(9=9,0,-(9-9)* 250,342.11) for comparable 3. Finally, *adjusted sales price* with age: =8,223,811.74+0 (for comparable 1) and 8,991,367.50+ 0 (for comparable 2) and 7,517,781.06+0(for comparable 3).

Table 30: Adjustment of sale price by age

4. Adjustment of sale by age				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,223,812	8,991,368	7,517,781
Age	9	9	9	9
Economic Life		30	30	30
Annual Depreciation Rate	3.33%	3.33%		
Annual Depreciation		273,852.93	299,412.54	250,342.11
Required Adjustment		0	0	0
Adjusted Sale Price		8,223,811.74	8,991,367.50	7,517,781.06

Source: Field Survey (2022), and computed in Microsoft Excel

Adjustment of sale price by built up area: As the *table 31* portrayed, the built-up area of subject and comparable 2& 3 is similar. If there is a variation in built up area between subject and comparable, there should be made subtraction of adjusted prices (previously adjusted price of comparable two-comparable one and comparable three-comparable one); this is because the built-up area of the subject and comparable 2&3 is similar. Therefore, the required adjustment: for comparable1 is IF (114.22=106.44,0, -(8,223,811.74-8,991,367.50) and for comparable2 =IF(106.44=106.44,0,-(8,991,367.74-8,991,367.50) and for comparable 3 =IF(106.44=106.44,0,-(8,223,811.74-7,517,781.06). Therefore, the final adjusted sale price in built-up area =8,991,367.5-(-767,555.76) (comparable property 1) and =8,991,367.50+0 (comparable 2) and 7,517,781.06+0(comparable 3).

Table 31: Adjustment of sale price by built up area

5. Adjustment of Sale Price by Built-up Area				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,223,811.74	8991367.503	7517781.055
Built-Up Area	106.44	114.22	106.44	106.44
Required Adjustment		767,555.76	0	0
Adjusted Sale Price		8,991,367.50	8,991,367.50	7,517,781.06

Source: Field Survey (2022), and computed in Microsoft Excel

Adjustment of sale price by floor height: According to the *table 32* the floor height of subject and comparable 2 is first floor which is similar. This indicated that there is no adjustment of sale price for comparable 2 to the subject. Whereas the floor height of comparable 1&3 is third floor which are inferior to the subject. Thus, the study required adjustments of prices only for comparable 1&3 to the subject. Therefore, the required adjustment is as follows: For comparable 1=IF (3=1,0, (8,991,367.5-7,517,781.055)); for comparable 2=IF(1=1,0,(8,991,367.5-7,517,781.055)) and for comparable 3 =IF(3=1,0,(8991367.5-7517781.055)).

Finally, the required adjusted value is (8,991,367.50+1,473,586.45=10,464,953.95) for comparable 1; 8,991,367.50+0=8,991,367.50 for comparable 2 and 7,517,781.06+1,473,586.45 = 8,991,367.50 for comparable 3.

Table 32: Adjustment of sale price by floor height

6. Adjustment of Sale Price by floor height				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,991,367.50	8,991,367.503	7,517,781.0
Floor Number	First floor	Third floor	First floor	Third floor
Required Adjustment		1,473,586.45	-	1,473,586.45
Adjusted Sale Price		10,464,953.95	8,991,367.50	8,991,367.50

Source: Field Survey (2022), and computed in Microsoft Excel

Adjustment of sale price by number of bedrooms: Based on the *table 33* the number of bedroom units of subject and comparable 2&3 are similar. This revealed that neither of them is inferior nor superior to the subject property. Thus, there would not a required adjustment of previously adjusted prices of comparable 2&3 to subject property. Whereas in the case of comparable 1, the number of bedroom units is 2 which indicated that it is inferior to the subject property. Therefore, the study made adjustments only for comparable 1 by subtracting the previously adjusted prices of comparable 2 and 3 from comparable 1. Therefore the adjustment for bedrooms is calculated by excel function as follows: for comparable 1 =IF(2=3,0,-(10,464,953.95-8,991,367.5)); for comparable 2 =IF(3=3,0,-(10,464,953.95-8,991,367.5)) and for comparable 3 =IF(3=3,0,-(10,464,953.95-8,991,367.5)). Finally, the adjusted sale prices of comparable properties are 10,464,953.95+(-1473586.45) = 8,991,367.50 for comparable 1; 8,991,367.50+0=8,991,367.50 for comparable 2 and 8,991,367.50+0=8,991,367.50 for comparable 3.

Table 33: adjustment of sale price by number of bedrooms

7. Adjustment of Sale Price by Number of Bedrooms				
	subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		10,464,953.95	8,991,367.50	8,991,367.50
Number Of Bedrooms	3	2	3	3
Required Adjustment		-1473586.45	0	0
Adjusted Sale Price		8,991,367.50	8,991,367.50	8,991,367.50

Source: Field Survey (2022), and computed in Microsoft Excel

Net adjustment of comparable to the subject property: The sales price of subject property is determined as the average unit price of comparable 1, 2 &3. Therefore, the unit price of the subject property is based on the *table 35* is 82,555 Ethiopian birr. As a result, the indicated market value of property C(subject) is calculated as: average unit price/m²*plinth area(subject)(m²) =82,555 birr/m²*106.44m². The indicated market value of the subject property is 8,787,221 Ethiopian birr.

Table 34: Net adjustment of comparable to the subject property

8. Net Adjustment				
	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,991,367.50	8,991,367.50	8,991,367.50
Plot Area(M2)	106.44	114.22	106.44	106.44
Adjusted Sale Price/M²		78,719.73	84,473.58	84,473.58
Average Sale Price/M²	82,555.63			
Indicated Market Value of Subject Property	8,787,221.00			

Source: Field Survey (2022), and computed in Microsoft Excel

4.6.3.2 Valuation of Property 'C' using cost method

Assessment of present value of property 'C' using depreciated replacement cost method is similar to procedures employed for property 'A' and property 'B' which is called abstraction method of appraisal based on comparable market data. According to the Addis Ababa City Housing development project office (2013) in the prominent location of Summit Safari, the construction cost for typical condominium flat near to the subject property block per meter square were 8,500birr. The production cost for each similar flat (housing unit) were similar. Based on the data of project office of the city the production cost of comparable 2 which is 100 meter distant from the subject property is 106.44m²*8,500birr/m² =904,740birr. The economic life of the comparable two is 30 years. The effective age of building block is 9 years.

Therefore, $DV = P\left(\frac{100-rd}{100}\right)^n$ ……Equation 10

where, DV=depreciated value; rd=depreciation rate, 3.33% for 30 years; n= building age

DV=904,740(1-0.0333) ^9

=667,035.98birr

The expected appreciation of construction material price on the date of appraisal is 31.5 % (CSA, 2022). Thus, the reproduction cost with similar design and material is increased by 31.5%. Therefore,

the reproduction cost of construction of comparable 2 is 667,035.98 birr+(667,035.98 birr*31.5/100). This resulted 877,151.98 birr. The indicated depreciated value of comparable 2 represents the equivalent depreciated value of subject property; the depreciated value of subject is 877,151.98 birr. The location value of comparable two is sales price (comparable 2)-depreciated value (comparable 2); which is 8,200,000-877,151.98=7,322,848 birr. The unit location value of comparable two=location value (comparable 2)/plot area of comparable 2 which is 7,322,848birr/106.44m²=68,797.89 birr. Based on the comparable data the land value of subject (property C) is=plot area of subject*unit value of location (comparable 2) which produced similar result with land value of comparable 2. This is because both the subject and comparable two are similar in their character. Thus, the present market value of location (subject) is 106.44m²*68,797.89 birr/m²=7,322,848 birr. Therefore, the adjusted land value of subject is 7,322,848 birrs. And the improvement value is 877,151.98 birr. Finally, the adjusted market value of property C in cost method is 7,322,848 birrs+877,151.98 birr=8,200,000 birr.

Table 35: Value of property C using cost method

Year	DRC Method
1	8,200,000
2	7,662,972.90
3	7,407,795.90
4	7,161,116.30
5	6,922,651.12

Source: Addis Ababa City Housing development project office (2013) and computed in Microsoft excel

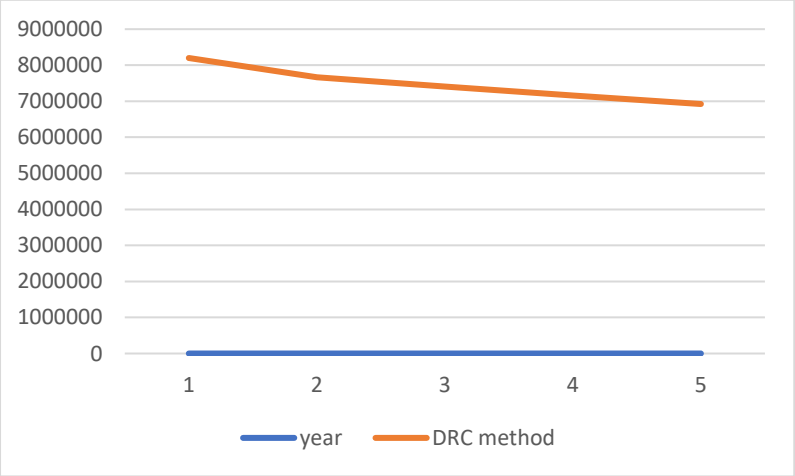


Figure 12: The market value of property C using DRC method

Source: Addis Ababa City Housing development project office (2013) and computed in Microsoft excel

As *table 36 and fig 12* indicated, when the age of the property 'C' increased, the property is depreciated by 3.33% per year. Based on the cost method the market values of subject are 8,200,000-birr, 7,662,973-birr, 7,407,796-birr, 7,161,116 birr and 6,922,651 birrs in the first five consecutive collateral years. Therefore, in the case of condominium flats, the decreasing value in cost method indicated that the appropriate method of valuation for loan security is not depreciated replacement cost method.

4.6.3.3 Valuation of property 'C' using income method

In the case of the study the researcher collected data about the income and expense of the properties from the owners (subject and comparable properties) during site inspection. The estimation of values for both properties (subject and comparable) is conducted by the rentable area of the property. And the overall rate is taken based on the comparable sales as follows:

Table 36: Cap Rate of Market (comparable)

Income Data	**comparable 1**	**comparable 2**	**comparable 3**
Rentable Area	114.22	106.44	106.44
Average Price/M²/(Birr)	105.06	140.92	108.04
Income/Month (Birr)	12,000	15,000.00	11,500.00
Potential Gross Rent Income (PGI)/Year	144,000.00	180,000.00	138,000.00
Vacancy And Collection Lose	0%	0%	0%
Effective Gross Income/Year	144,000.00	180,000.00	138,000.00
Expense (Exp) (Utilities, Property Tax)/Year	23,000	18,600	21,400.00
Net Operating Income/Year	121,000.00	161,400.00	116,600.00
Sales Price	7,500,000	8,200,000	6,700,000
Capitalization Rate (%)	2%	2%	2%
Average Cap Rate		2%	

Source: Field Survey from Owners of the Properties (2022)

The *table 36* above indicated that the overall rate is lower (2%) which indicated that the investment needs long period of time to recover its invested capital. Based on the overall cap rate of comparable properties the study estimated the market value of the subject property using income capitalization follows:

Table 37: Valuation of property C using income capitalization

Rentable Area	106.44
Average Price/M²/(Birr)	112.74
Income/Month (Birr)	12,000.00
Potential Gross Rent Income (PGI)/Year	144,000.00
Vacancy And Collection Lose	0%
Effective Gross Income/Year	144,000.00

Operating Expense (Utilities, Property Tax) Per Year	20,350.87
Net Operating Income/Year	123,649.13
Overall Rate	2%
Indicated Market Value	6,182,456.50

Source: Field Survey from Owners of the Properties (2022) Computed with Microsoft Excel

As the *table 37* above portrayed, the market value of property C using income capitalization method is 6,182,456.50 birr. The lower the overall rate (2%) indicated that the owner of the property needs long period of time to recover the invested capital on the property. In this case, the study assumes that the value result did not depend on the historical and future cashflows of property C. Also, the changes of rent cashflows and net operating income should be in a steady change within the collateral period. Thus, lower result in income capitalization indicated that the appropriate method of valuation of condominium flats is not income method. This indicated that unlike to the Ethiopian bankers' association manual (2015) in the case of condominium flats, compared to income method the market value of the subject property strongly depends on market characteristics. Therefore, based on the study, the appropriate method of valuation for collateral assignment in the case of condominium flat is market comparison method(see table 35).

4.6.4 Valuation of warehouse and storage properties (property D)

4.6.4.1 Valuation of property D using market comparison

Subject property D (Subject property): it is a G+0 Warehouse building located at "Kilinto Industrial park". It has a plot area of 2000m² (40*50). It has a roof height of 6m. The built-up area of the building is 1,016m². It is a detached new building with good conditions of newly constructed before 4 years in 2018(source: Legal property owner, 2022). It is built in hollow concrete block, plastered (both internal and external) walls, cement concrete floor finish, metal sheet doors and windows with a very good electrical and sanitary fixtures (Field Survey, 2022). The purpose of valuation undertaken by the bank is for collateral.

Comparable property 1: it is a G+0 storage building located at "Kilinto industrial park". It has a total plot area of 1900m²(30*63) adjacent to the subject property. The built-up area of the building is 1,016m². It has a roof height of 6m. The total construction cost new of the property is 21 million birrs (source: owner of the property, 2022). The building has effective age of 3 years. It is built in hollow concert block, both plastered (internal and external) walls, cement concrete floor finish, EGA roof type, metal sheet doors and windows with a very good electrical and sanitary fixtures (Field Survey, 2022). The sales transaction was made on December 2021. The sales price of the property was 48million birr.

Comparable property 2: it is G+0 storage building with a G+0 ware house and office building located at "kilinto industry park). It has a total plot area of 2000m² (33*60) which is 200m distant to the subject property. The built-up area of the buildings is 830m². It has a warehouse roof height of 6m. It is

built in hollow concrete block, both plastered (internal and external) walls, cement concrete floor finish, EGA roof type, metal sheet doors and windows with a very good electrical and sanitary fixtures (Field Survey, 2022). The sales transaction was made on March 2022. The sales price of the property was 54million birr.

According to the site inspection of the study both the subject and comparable property are similar in location (adjacent to each other) which shares the following common attributes: they are very good class of quality depicted to their finishing material quality and workmanship. They are far from the major road in 350m. They have similar land grade, regular parcel shape and gentle slope. They have available utilities such as water, sewerage line, and electricity except a well paved access road .

Table 38: General information about the subject (property D) and comparable properties

	location	Built-up area(m^2)	Age (years)	Plot area	Transaction condition	Transaction date	Transaction price(birr)
Comparable-1	Kilinto Industrial Park	1,016	3	1900	Normal	December 2021	48,000,000
Comparable-2	Kilinto Industrial Park	830	3	2000	Normal	March 2022	54,000,000
Subject property	Kilinto Industrial Park	1,016	4	2000	Normal	August 2022	?

Source: Clients of comparable properties (2022) and computed by excel

Table 39: Adjustment of sale made for property D

1. Adjustment of Sale Price by Transaction Date			
	Subject property	comparable 1	comparable 2
Transaction Price		48,000,000	54,000,000
Transaction Date	August, 2022	December, 2021	March, 2022
Difference In Months		9	6
Monthly Price Growth		2.77%	2.77%
Adjusted Sale Price		61,381,634.11	63,619,741.33
2. adjustment of sale by location			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		61,381,634.11	63,619,741.33
Location	similar	similar	similar
Required Adjustment		0	0

Adjusted Sale Price		61,381,634.11	63,619,741.33
3. Adjustment of sale by transaction condition			
	Subject property	comparable 1	comparable 2
Previously Adjusted Price		61,381,634.11	63,619,741.33
Transaction Condition		normal	normal
Required Adjustment		0	0
Adjusted Sale Price		61,381,634.11	63,619,741.33
4. Adjustment of sale by age			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		61,381,634.11	63,619,741.33
Age (Years)	4	3	3
Economic Life		30	30
Annual Depreciation Rate		3.33%	3.33%
Annual Depreciation		2,044,008	2,118,537
Required Adjustment (Birr)		2,044,008.42	2,118,537.39
Adjusted Sale Price(Birr)		63,425,642.53	65,738,278.72
5. Adjustment of Sale Price by Built-up Area			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		63,425,642.53	65,738,278.72
Built-Up Area	1,016	1,016	830
Required Adjustment		-	2,312,636.00
Adjusted Sale Price		63,425,642.53	68,050,914.72
6. Adjustment of Sale Price by land holding type			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		63,425,642.53	68,050,914.72
Land Holding Type	LEASE	LEASE	LEASE
Required Adjustment		0.00	0.00
Adjusted Sale Price			
7. Net Adjustment			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		63,425,642.53	68,050,914.72
Plot Area(M2)	2,000.00	1,900.00	2,000.00
Adjusted Sale Price/M²		33,381.92	34,025.46
Average Sale Price/M²	33,703.69		
Indicated Market Value Of Subject Property	67,407,374.48		

Source: Clients of Comparable Properties (2022) Computed by Microsoft Excel

As the *table 39* above indicated, market adjustments by Transaction date, location, transaction condition, age, built-up area and land holding type are similar procedures with the adjustments applied for property A and property B. Thus the market value of property D is 67,407,374.48 rounded to 67,407,374 Ethiopian birr applicable only on the date of appraisal (August 2022). But the prices are changing monthly by 2.77% per month. Furthermore, the monthly growth rate (2.77%) is applicable only for warehouse and storage properties in the study area of the subject property, Kilinto Industrial Park.

4.6.4.2 Valuation of property 'D' using cost method

The market value estimation method for subject property is similar to cost methods employed for property A, B and C. According to the site inspection and information from owners, both the comparable properties (1&2) are closely comparative subject in age to calculate the average cost per m². Among others, the built-up area of comparable 1 and subject are similar. And as there is no large difference in age of comparable properties (1&2) with subject property. Therefore, the study selected comparable 1 to index its replacement cost and finally computed to index the replacement cost of the subject as follow:

First, to index the cost of replacement new of comparable 1 for subject property, its historic cost of construction new data is collected from the owner (field survey, 2022). According to the building contractor agreement between client and contractor of comparable 1 its original cost of construction is 24.34 million birrs. The economic life of the comparable one is 30 years. The effective age of building is 3 years. The annual depreciation rate is 3.33 %.

$DV = P\left(\frac{100-rd}{100}\right)^{n}$ ……Equation 11

Where, DV=depreciated value; rd=depreciation rate, 3.33% for 30 years; n= building age

DV=24,340,000(1-0.0333)3

=21,988,506.37birr

The expected appreciation of construction material price on the date of appraisal is 31.5 % (CSA, 2022). Therefore, the total appreciation of value of the building is= (DV*rate of appreciation); =6,926, 379.5birr. The replacement cost new (prime cost) = P=28,914885.87 birr. The unit cost replacement value of comparable 1 =28,914,885.87 birr/1,016m² which= 28,459.53birr. The land value= sales price (comparable 1)-the replacement cost new (comparable 1) which is (48,000,000-28,914,885.87 =19,085,114 birr). Thus, the land value per square meter is =land value (comparable 1)/plot area (comparable 1) which is 19,085,114 birr /1900m²=10,044.79 birr.

Based on the data from comparable one the replacement cost new of subject is derived from the unit value of comparable 1. The replacement cost new of subject is= built up are(subject)* unit building value of comparable one; which is 1,016m²* 28,459.53birr/m²=28,914,882.48 birr. The land value of subject is =plot area(subject)* unit value of land (comparable 1); which is= 2000m²*10,044.79 birr/m²=20,089,580birr. Therefore, the adjusted market value of subject based on comparative data at the date of appraisal (August 2022) is = land value(subject) + replacement cost new(subject); which is 20,089,580 birrs + 28,914,882.48 birrs=49,004,462.48birr. This indicated that at the date of appraisal an investor couldn't pay more for property D than constructing another equivalent property of equal utility and equal risk by 49,004,462.48birr.

Table 40: Value of property D using international practice

Year	DRC Method
1	49,004,462.0000
2	45,795,105.39
3	44,270,128.38
4	42,795,933.10
5	41,370,828.53

Source: Owner of Subject Property (2022)

And computed in Microsoft Excel

According to the *table 40* above as the property D is aged, its value decreases by 3.33% per year. Thus, the graph (fig. 13) below indicated that the sale value of subject decreased through collateral period. Its market value using depreciated replacement cost became 49,004,462birr, 45,795,105-birr, 44,270,128-birr, 42,795,933 birr and 41,370,828 birrs for the first five consecutive collateral years.

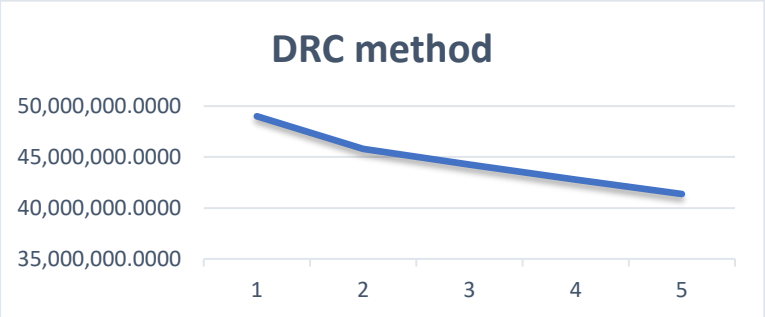


Figure 13: Market Value of property D using DRC method

Source: Owner of Subject Property (2022) And computed in Microsoft Excel

4.6.4.3 Valuation of property 'D' using income approach

The calculation of overall cap rate for comparable market evidence is similar to procedures employed for property A and C. The study collected income and expense data from the owner of comparable properties during site inspection. The comparable are storage buildings rented for importers.

Table 41: Over all Cap rate of comparable properties

Income Data	**Comparable 1**	**Comparable 2**
Rentable Area	945	782.6
Average Price/M²/(Birr)	190.48	166.11
Income/Month (Birr)	180,000	130,000.00
Potential Gross Rent Income (PGI)/Year	2,160,000.00	1,560,000.00
Vacancy And Collection Lose	0%	0%
Effective Gross Income/Year	2,160,000.00	1,560,000.00
Expense (Exp) (Utilities, Property Tax)/Year	320,000	283,000
Net Operating Income/Year	1,840,000.00	1,277,000.00
Sales Price	48,000,000	54,000,000
Capitalization Rate (%)	4%	2%
Average Cap Rate	3%	

Source: Owner of comparable Property (2022) and computed in Microsoft Excel

Based on the income and expense data from the client, the study valued the subject by converting net operating income to present market value as follows:

Table 42: Valuation of property D using income capitalization

Rentable Area	941
Average Price/M²/(Birr)	191.29
Income/Month (Birr)	180,000.00
Potential Gross Rent Income (PGI)/Year	2,160,000.00
Vacancy And Collection Lose	0%
Effective Gross Income/Year	2,160,000.00
Operating Expense (Utilities, Property Tax) Per Year	396,000.00
Net Operating Income/Year	1,764,000.00
Overall Rate	3%

Indicated Market Value	58,800,000.00

Source: Owner of Subject Property (2022) and computed in Microsoft Excel

The lower the cap rate (3%) also indicated that the owner could get high risk and needs long period of time to recover the invested capital of the subject. According to Ethiopian bankers' association manual (2015) the member banks should value warehouse and storage properties using the cost method. However, based on the study as the age of property increase the value of property using cost method decreased(*see table 40*). Therefore, in the case of ware house and storage properties, compared to cost and income approach the appropriate basis of valuation during collateral is market value. And the relevant method is market comparison.

4.6.5 Valuation of fuel station Properties

4.6.5.1 Valuation of property 'E' using market comparison

Property E (Subject property): it is a G+0 fuel station building located in "Akaki kality subcity Tulu Dimtu" area. It is a new fuel station building and canopy with four tankers. It has a total plot area of 1,240m² (27.5*45). It has a total built up area of 320m². It is a newly constructed property on 2019(source: Legal owner of property, 2022). The adjacent properties of the subject are commercially dominant mixed-use buildings. The width of the road adjacent to the subject property is 40m asphalt. The potential use of the plot is commercial (shop, mall, hotel etc.). The property was valued by the banks for collateral purpose.

Comparable property1: it is a G+0 fuel station and office building located in "Akaki kality subcity near to Tulu Dimtu to Alem bank square". It is a new fuel station building and canopy with six tankers. It has a total plot area of 1,240(23*53.9). It is located 2km distance from the subject property. It is nearly adjacent to the 40m asphalt road. The built-up area of the building is 320m². It is a detached new building with good conditions constructed before 4 years in 2018. The property was sold on January 2022. Its sales was transacted with a price of 58 million birr.

Comparable 2: it is a G+0fuel station and office building which is adjacent to the 60m asphalt road around "Tulu Dimtu to Koye Feche square". It is a newly constructed building and canopy with four tankers. It has a total plot area of 1,150m² (23*50). It has a total built up area of 528m². It has a distance of 3.5km from the subject property. The total construction cost new of the property is 24 million birrs (source: Representative of property owner, 2022). It is a detached moderate building with good conditions constructed before 5 years in 2016. The property was sold on June 2022. Its sales was transacted with a price of 65 million birr.

According to the site inspection of the study both the subject and comparable property (1 and 2) are similar in location which shares the following common site attributes: the improvements are good class of quality depicted to their finishing material quality and workmanship. All are fuel stations. They are

adjacent to 40m major road. They have similar land grade, regular parcel shape and gentle slope. They have available utilities such as transport service, water, sewerage line, and electricity (Field Survey, 2022).

Table 43: General information of subject (property E) and comparable properties

Comparable sales	**Price**	**Date**	**Size(m)**	**Plot area(m^2)**	**Number of tankers**	**Built up area(m^2)**	**Age(years)**
Property-1	58million	January 2022	23*53.9	1,240	6	320	4
Property-2	65million	June 2022	23*50	1,150	4	528	5
Subject	?	August 2022	27.5*45	1,240	4	320	3
Monthly growth rate	1.77%						

Source: Field survey (2022).

According to the site inspection of the study the brokers provided market data for the purpose of the study. Based on the data the researcher recorded the monthly growth rate of market price in the neighborhood near to property E (subject property). Therefore, the researcher reached at the land price (location value) or land as vacant increased by 1.66% per month. The monthly growth rate (1.66%) is applicable only for fuel station properties near subject property around Tulu Dimtu to Koye Feche square.

Table 44: Adjustment of sale price using market comparison

1. Adjustment of Sale Price by Transaction Date			
	Subject property	comparable 1	comparable 2
Transaction Price		58,000,000	65,000,000
Transaction Date	August, 2022	January, 2022	June, 2022
Difference In Months		8	3
Monthly Price Growth	1.66%		
Adjusted Sale Price		66,165,079.17	68,291,031.53
2. Adjustment of sale price by location			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		66,165,079.17	68,291,031.53
Location	similar	similar	similar
Required Adjustment		0.00	0.00
Adjusted Sale Price		66,165,079.17	68,291,031.53

3. Adjustment of sale by transaction condition			
	Subject property	comparable 1	comparable 2
Previously Adjusted Price		66,165,079.17	68,291,031.53
Transaction Condition		normal	normal
Required Adjustment		0	0
Adjusted Sale Price		66,165,079.17	68,291,031.53
4. Adjustment of sale by age			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		66,165,079.17	68,291,031.53
Age (Years)	3	4	5
Economic Life		30	30
Annual Depreciation Rate		3.33%	3.33%
Annual Depreciation		2,203,297	2,274,091
Required Adjustment		(2,210,242.00)	(4,553,554.00)
Adjusted Sale Price		68,375,321.17	72,844,585.53
5. Adjustment of Sale Price by Built-up Area			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		68,375,321.17	72,844,585.53
Built-Up Area	320	528	320
Required Adjustment		4,469,264.36	0
Adjusted Sale Price		63,906,056.81	72,844,585.53
6. Adjustment of sale price by number of tankers			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		63,906,056.81	72,844,585.53
Number of Tankers	4	6	4
Required Adjustment		(4,420,484.00)	0.00
Adjusted Sale Price		68,326,540.81	72,844,585.53
7. Adjustment of Sale Price by land holding type			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		68,326,540.81	72,844,585.53
Land Holding Type	LEASE	LEASE	LEASE
Required Adjustment		0.00	0.00
Adjusted Sale Price		68,326,540.81	72,844,585.53
8. Net Adjustment			
	Subject property	comparable 1	comparable 2

Previously Adjusted Sale Price		68,326,540.81	72,844,585.53
Plot Area(M2)	1,140	1,200	1,036
Adjusted Sale Price/M²		56,938.78	70,313.31
Average Sale Price/M²	63,626.05		
Indicated Market Value of Subject Property	72,533,691.59		

Source: Owners and Brokers in Field Survey (2022) And Computed By Microsoft Excel

Adjustment of sale price by transaction date: The sales of comparable 1 was transacted 8 months ago in January 2022 and comparable 2 was transacted 3 months ago on June 2022 which both are inferior to the subject property. Their sales price was 58 million and 65million birr respectively. The monthly market price in the neighborhood changes approximately by 1.66%. Therefore, if the sales transaction were after 8 months and 3 months (august 2022), their price would be 66,165,079.17 birr and 68,291,031.53 birr respectively. After the study recorded rates of changes of market prices, the study adjusted the sales price as follows:

First the monthly growth rate for the G+0 fuel station property is 1.66% (*see table 44*). The adjusted sales price is computed using excel function=-FV(rate;nper;pv) from this the rate is sales price growth per month, nper is the number of time indicating the variation of prices in months, and pv represents the present value(sales price of the comparable property). Therefore, the adjusted transaction(sales) price in transaction date is: =-FV(1.66%,8,,58million) for comparable 1 and =-FV(1.66%,3,,65million) for comparable 2.

Table 45: Adjustment sale prices by transaction date

1. Adjustment of Sale Price by Transaction Date			
	Subject property	comparable 1	comparable 2
Transaction Price		58,000,000	65,000,000
Transaction Date	August, 2022	January, 2022	June, 2022
Difference In Months		8	3
Monthly Price Growth	1.66%		
Adjusted Sale Price		66,165,079.17	68,291,031.53

Source: Owners and Brokers in Field Survey (2022) and Computed By Microsoft Excel

Adjustment of sale price by location: both the subject and comparable properties are located in a similar neighborhood with nearly similar slope, frontage to local Street and regular shape of plots. They are similar in their land grade and potential use of each plot (potential if commercial). Each plot is adjacent to the major road. The adjacent development of each property is commercial. Neither of the comparable is inferior nor superior to the subject property in location character. Therefore, there are no required adjustments for comparison in market price because of location.

Table 46: Adjustment of sale price by location

2. Adjustment of sale price by location			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		66,165,079.17	68,291,031.53
Location	similar	similar	similar
Required Adjustment		0.00	0.00
Adjusted Sale Price		66,165,079.17	68,291,031.53

Source: Owners and Brokers in Field Survey (2022) and computed by Microsoft Excel

Adjustment of sale price by transaction condition: According to the property owners, all the transactions are normal without any special relationship between the buyer and the seller.

Table 47: Adjustment of sale price by transaction condition

3. Adjustment of sale by transaction condition			
	Subject property	comparable 1	comparable 2
Previously Adjusted Price		66,165,079.17	68,291,031.53
Transaction Condition		normal	normal
Required Adjustment		0	0
Adjusted Sale Price		66,165,079.17	68,291,031.53

Source: Owners and Brokers in Field Survey (2022) and computed by Microsoft Excel

Adjustment of sale price by age: According to the data from owners brokers near the study area, the effective age of the comparable property one is 4 years and comparable two is 5 years. The annual depreciation of improvement is approximately 3.33%. The annual depreciation of comparable 1 is 2,203,297 birr and comparable 2 is 2,274,091 birrs. Thus, the required adjustment is calculated as follows: First multiplying age differences between the subject and comparable property by annual depreciation rate of the comparable properties. Thus, the required adjustment is= IF(4=3,0,-(4-3)* 2,203,297 for comparable property 1 and =IF(5=3,0,-(5-3)* 2,274,091) for comparable 2. Finally, adjusted sales price with age: =66,165,079.17 +(2,210,242.00) (for comparable 1) and 68,291,031.53 +(4,553,554.00) (for comparable 2).

Table 48: Adjustment of sale price by age

4. Adjustment of sale by age			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		66,165,079.17	68,291,031.53
Age (Years)	3	4	5
Economic Life		30	30
Annual Depreciation Rate		3.33%	3.33%
Annual Depreciation		2,203,297	2,274,091
Required Adjustment		(2,210,242.00)	(4,553,554.00)
Adjusted Sale Price		68,375,321.17	72,844,585.53

Source: Owners and Brokers in Field Survey (2022) and computed by Microsoft Excel

Adjustment of sale price by built up area: According to the *table 49* the built-up area of the comparable two and the subject property is similar. In the case of this study if there is a variation in built up area between the subject property and comparable properties, there should be made subtraction of adjusted prices (previously adjusted price of comparable two-comparable one); this is because the built-up area of the subject and comparable two is similar. Therefore, as table 49 below indicated, the required adjustment: for comparable 1 is =IF(528=320,0,-(68375321.17-72844585.53))and for comparable 2 =IF(320=320,0,-(68375321.17-72844585.53)). Therefore, the final adjusted sale price in built-up area = =68,375,321.17-4,469,264.36 (comparable property 1) and = =72,844,585.53-0 (comparable 2).

Table 49: Adjustment of sale price by built up area

5. Adjustment of Sale Price by Built-up Area			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		68,375,321.17	72,844,585.53
Built-Up Area	320	528	320
Required Adjustment		4,469,264.36	0
Adjusted Sale Price		63,906,056.81	72,844,585.53

Source: Owners and Brokers in Field Survey (2022) and computed by Microsoft Excel

Adjustment of sale price by number of tankers: As number of tankers for the subject property and the comparable 2 is similar, there will no need of required adjustment for the sale price. The price adjustment is made only for comparable 1.

Table 50: Adjustment of sale price by number of Tankers

6. Adjustment of sale price by number of tankers			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		63,906,056.81	72,844,585.53
Number of Tankers	4	6	4
Required Adjustment		(4,420,484.00)	0.00
Adjusted Sale Price		68,326,540.81	72,844,585.53

Source: Owners and Brokers in Field Survey (2022) and computed by Microsoft Excel

Adjustment of sale price by number of tankers: as both the comparable and subject properties are held on the basis of land use right in lease basis, there is no price variance in the land holding type. Thus, there is need of adjustment on sale price due this adjustment factor.

Table 51: Adjustment of sale price by number of Tankers

7. Adjustment of Sale Price by land holding type			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		68,326,540.81	72,844,585.53
Land Holding Type	LEASE	LEASE	LEASE
Required Adjustment		0.00	0.00
Adjusted Sale Price		68,326,540.81	72,844,585.53

Source: Owners in Field Survey (2022) and computed by Microsoft Excel

Net adjustment: The average adjusted land price per square meter of the comparable is 63,626.05 birr. Therefore, the subject property has an indicated land value as follows:

Land value of property E (subject property) =The plot area of subject property*average adjusted land price per square meter.

=1,140m²* 63,626.05 birr/m²

=72,533,691.59 birr.

Table 52: Net adjustment of sale price for property E

8. Net Adjustment			
	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		68,326,540.81	72,844,585.53
Plot Area(M2)	1,140	1,200	1,036
Adjusted Sale Price/M²		56,938.78	70,313.31
Average Sale Price/M²	63,626.05		
Indicated Market Value of Subject Property	72,533,691.59		

Source: Owners and Brokers in Field Survey (2022) and computed by Microsoft Excel

4.6.5.2 Valuation of property 'E' using Cost Method

The calculation of market value of property E using cost method is similar to procedures employed for property A, B, C and D. In this case as the building of comparable properties are fairly new, the historic cost (actual cost) is indexed to the cost new on the date of appraisal (August 2022). The study calculated the improvement value of the subject property based on the market data from closely comparable property. According to *table 49* built-up area of the subject property and comparable 2 is similar. Both are good class of quality depicted to their finishing material and workmanship quality. Thus, the study selected comparable 2 to indicate the market price (both land and improvement) of the subject.

The gross estimation of construction cost (historic cost) of comparable two is 24 million birrs. The effective age of comparable 2 is 5 years. The economic service life of comparable 2 is 30 years. The annual depreciation rate is 3.33% (*see table 49*).

$$DV = P\left(\frac{100-rd}{100}\right)^{n} \quad \text{.....Equation 12}$$

DV=depreciated value; rd=depreciation rate, 3.33% for 30 years; n= building age

DV=24,000,000(1-0.0333)5

=20,261,417.92birr

The expected appreciation of construction material price on the date of appraisal is 31.5 % (CSA, 2022). Therefore, the total appreciation of value of the building is= (DV*rate of appreciation); =6,382346birr. The replacement cost new (prime cost) = P=26,643764.56 birr. The unit cost replacement value of comparable two =26,643,764.56 birr/320m² which= 83,261.76birr. Finally, the depreciated value of the subject property is determined by multiplying the depreciated unit value of comparable 2 with square footage (built up area) of subject property. Therefore, 83,261.76birr *320=26,643,764.56 birr.

The land value of comparable 2 is determined as= sales price (comparable 2)-the replacement cost new (comparable 2) which is (65,000,000-26,643,764.56 =38,356,235.44birr). Thus, the land value per square meter is =land value (comparable 2)/plot area (comparable 2) which is 38,356,235.44birr /1,036m²=37,023.39 birr.

Therefore, the indicated land value of the subject property is determined from the comparative adjustment as multiplying the unit value of land for comparable 2 by the lot size of the subject property: thus, the indicated land value of the subject (1,140*36,287.09) = 42,206,668.34 birr. Thus, the indicated market value of subject property is: land value of subject plus depreciated building value of subject (42,206,668.34 +26,643,764.56). Finally, the adjusted market price of subject property using cost approach is 68,850,432.90 Ethiopian birr.

Table 53: Value of property E using DRC method

Years	DRC Method
1	68,850,432.90
2	64,341,341.63
3	62,198,774.95
4	60,127,555.74
5	58,125,308.14

Source: Building Contractor of Comparable Property Two in Field Survey (2022) and Computed By Microsoft Excel

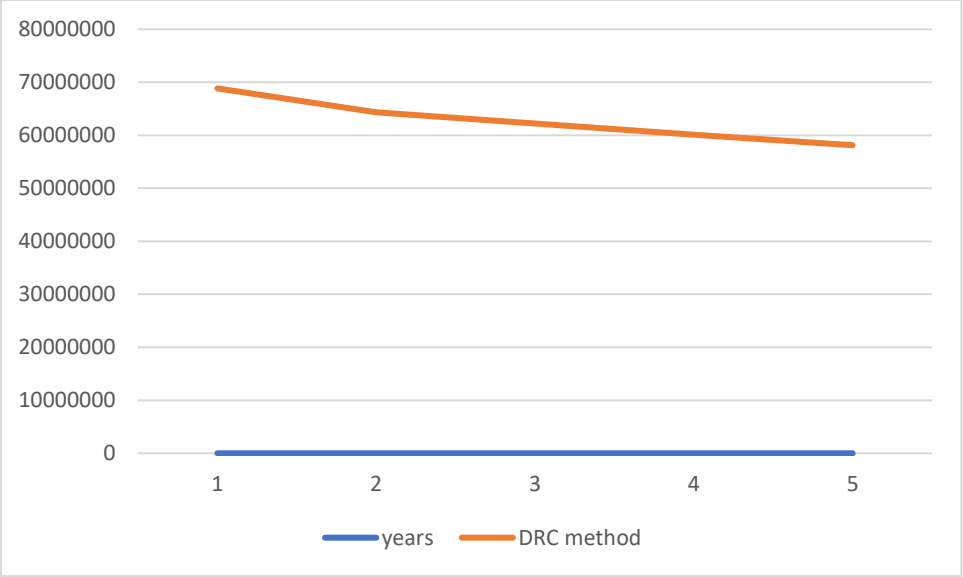


Figure 14: Market value of property E using DRC method

Source: Building Contractor of Comparable Property Two in Field Survey (2022) and Computed By Microsoft Excel

The graph above indicated that as the age of the property increase, the market value of property E decrease due depreciation. The value of the subject is 68,850,432.90, 64,341,341.63, 62,198,774.95, 60,127,555.74 and 58,125,308.14 birr in the first five collateral years. On the other hand, in keeping the urban planning control constant, as the date of transaction increase the market price of the subject increase by 1.66% per month (*see table 44*). Thus, compared to the cost method the appropriate method of valuation in the case of fuel stations, to secure loans from defaults is market comparison.

4.6.5.3 Valuation of property 'E' using Income approach

The determination of market value of property E using income capitalization is similar to procedures employed for property A, C and D. The researcher collected data about the income and expense of the property from the concerned office of the properties (subject and comparable properties). The

estimation of values for both properties (subject and comparable) is conducted by the total plot area of the property. And the overall rate is taken according to the comparable sales of the market as follows:

Table 54: Over all caprate of the comparable properties

	Comparable 1	Comparable 2
Potential Gross Income (PGI)/Year	42,760,320	67,200,000
Vacancy	0	0
Effective Gross Income/Year	42,760,320	67,200,000
Operating-Expense (Oexp)/Year	14,400,000	18,312,000
Net Operating Income/Year	28,360,320	46,688,000
Sales Price	58,000,000	65,000,000
Capitalization Rate/Year	0.50%	0.72%
Average Cap Rate	0.61%	

Source: Field Survey from Concerned Office of the Properties (2022).

The study estimates the market value of the subject property based on the overall average caprate of comparable as follows:

Table 55: Value of property E(subject)

Potential Gross Income/Year	57,841,432.2
Less Vacancy and Collection Loss/Year	0.00
Less Expense (Utility, Insurance, Salary, Tax)/Year	13,418,211.5
Effective Gross Income/Year	57,841,432.2
Net Operating Income/Year	44,423,220.7
Overall Rate	0.61%
Indicated sale price	72,824,951.96

Source: Field Survey from Concerned Office of the Properties (2022).

As the *table 54 above* indicated, the overall rate of return is calculated as the average of the rate of comparable which is (0.61%). The higher the overall caprate (0.61%) indicates that the investor needs short period of time to recover the invested capital on the subject. In this case, the study assumes that the cash flow from the asset should grow at constant rate in perpetuity. Both net operating income and capitalization rate used in the capitalization model should grow in a steady change. The study also did not reference both historic performance and forecasts of cashflows of subject and comparable which is a single period valuation at the date of appraisal. Therefore, based on the average caprate derived from comparable properties, the present market value of the subject is determined by converting the annual

net operating income to the indicated present value at the date of appraisal (August 22). Therefore, as *table 56* above portrayed, the indicated market value of the subject based on the cap rate of comparable data on August 2022 is 72,824,951.96 birr (seventy-two million eight hundred twenty thousand nine hundred and fifty one birr per ninety six cents).

Moreover, as the higher the caprate, net operating income and cashflows of comparable increased in steady change; thus market price of subject increased in a steady change. Finally, the study argued that in the case of property E (fuel stations) the appropriate valuation methods are market comparison and income method. Based on the result the study summarized the actual market price and assessed value by Awash international bank and Dashen bank as follows:

Table 56: Summary of assessed value by Awash bank and Dashen bank Actual market value using market comparison of international practice

	Collaterals		**property A**	**property B**	**property C**	**property D**	**property E**
Awash bank	Method Used		Cost method	Cost method	Cost method	Cost method	Cost method
	Estimated value		21,341,950	235,371,300	6,563,835	34,068,320	35,405,240
Dashen bank	Method Used		Cost method	Cost method	Cost method	Cost method	Cost method
	Estimated value		26,127,384	382,455,927	6,310,721	28,818,459.44	29,046,628
International practice	Sale price	Market comparison	43,116,935.12	541,294,122.64	8,787,221.00	67,407,374.48	72,533,691.59
		cost	29,084,403.5	351,179,898	8,200,000	49,004,462.0000	68,850,432.90
		income	13,227,600.00	361,162,034	6,182,456.50	58,800,000.00	72,824,951.96
Value difference (Birr) between Market comparison and Awash bank Assessed Value			21,774,985.00	304,990,246.00	2,223,385.52	33,339,054.48	37,128,451.59
Market Value variation				56%	25.3%	49.46%	51.2%

with Awash bank (%)	51%				
Value difference (Birr) between Market comparison and Dashen bank Assessed Value	16,989,551.00	157,905,619.00	2,476,500	38,588,915.04	43,487,063.59
Market Value variation with Dashen bank (%)	39%	29%	28.18%	57%	59.9%

Source: Awash bank and Dashen Bank (2022) and Brokers and Owners (2022)

4.7 Discussions on the results

Introduction

In this section, the major findings of the present study are discussed according to the research questions. In addition, the results of the present study are discussed in relation to the results of previous studies reviewed in the literature review section. In other words, this section is devoted to discussing the connection of the results of this study to the results and findings of previous studies. This section includes a discussion of the valuation practices in the banks and their consistency from bank to bank and compared the estimation arrived by the banks with actual market values that are found by using the market comparison method (for residential, condominium flats, ware house and storage) both market comparison and income methods (for commercial and fuel station properties).

4.7.1 Real property valuation basis and methods in the banks

In Addis Ababa property valuation is an important activity in expropriation because rights holders must receive compensation based on the appraised value of their lost property during expropriation. Previous laws such as the Addis Ababa Land Charter and the Civil Code did not explicitly regulate the issue of property valuation. However, the federal government's current expropriation declaration under Section 7(2) provides for a replacement cost approach as the method of valuation for all types of property (FDRE, 2005). Since an expropriation is a forced sale, compensation should allow the loser to go on the market and acquire a similar property of equal utility. However, the Expropriation Act disputes this fact under Article 2. Based on article 7(1) by arguing that land is not a compensable element (FDRE, 2005). This influenced banks argued that land is not qualified as loan security; thus, the existing building elements on the land are estimated using cost method. Only distance of property line of the property under the collateral is considered as a location value. However, the guidelines undertaken in the process is also different. According to the literature this is emanated from absence of strong national agency that provides clear guidelines, technical and financial guidelines for property valuation. As a result, there is a lack of a legally regulated assessment criteria covering ethical and competence issues, such as the rationale for assessment, the stated purpose of assessment, and competency testing of assessors. This will lead to the application of non-standard assessment sets and methodologies in different parts of the banks. Failure to use standardized methods in the banks resulted in undervaluation for right holders during collateral. Therefore, there is a need for property valuation standards that set general principles, compatible with property market systems, and are consistent with internationally accepted practices.

4.7.2 Consistency of valuation practices employed by the banks

Addis Ababa has no valuation standard, as a result real property valuation has been practiced without any framework based on intuitive knowledge by a committee. This contradicts the international valuation practice where certified valuers do the valuation assignment depending on the national or international standards (RICS, 2017a). As a result, the valuation output is not consistent and appropriate between banks.

Based on the depth interview, site inspection and desk review of the study in the banks, the similarities and variations are observed on major features of the qualification and procedures employed for the valuation of property pledged as collateral which caused differences in estimated values of properties. This section dealt on the consistency of the Awash bank and Dashen bank based on their valuation standard and guidelines practiced on the date of appraisal, August 2022.

4.7.2.1 Based on Minimum Qualification of Building to be held as Collateral required for the purpose

According to the site inspection and desk review real properties usually held by commercial banks particularly as back-up to any risk related with the loans they grant for an investment. More or less, both Awash and Dashen Bank do not consider a real property as loan security if it is below the minimum quality of improvement on the land specifically if they are constructed of dilapidated building elements which do not last the collateral period such as buildings made up of corrugated iron sheet shelters. The minimum qualification for the elements of the building such as foundation, floors, internal and external wall, roof, door, and windows are similar and bases it justification on such property is expected to endure providing utility within the collateral period thereby easily marketable as buildings need to last the collateral period, maintaining solid physical status and market demand.

4.7.2.2 Based on method of measurement

Fundamentally, the essence of internationally accepted appraisal standards and guidelines, such as the RICS Code of Practice of Measurement, allows for accurate measurements, calculations of sizes (area and volume), and descriptions or specification of buildings and land on common and consistent standards to create a strong single benchmark of common standards that countries mention to as a reference for practice (Parker, 2016). This is because real estate valuations are becoming the basis for decisions regarding secured lending, financial reporting by multinationals on cross-border real estate investments, real estate securitizations (Babawal & Omirin, 2012).

Awash bank manual has adopted the RICS Code of Measuring Practice, 5th Edition of the Royal Institute of Chartered Surveyors (Red Book), GEA (Gross External Area) for all practical purposes and reporting needs as defined in the code is used. Likewise Dashen bank manual also adopted the RICS Code of Measuring Practice, 5th edition (Red Book) for all practical purposes and reporting

needs of cost approach. In addition, in cases when the bank need to use the income approach for special income producing properties, Net Internal Area (NIA) as defined in the RICS Code of Measurement is employed.

As a result, the study argued that, despite the fact that, both banks adopted the RICS Code of Measuring practice in cost approach, they used each measuring practice similarly with the code. However, unlike to Dashen bank, the Awash bank didn't conduct income method; so, the net internal area as defined in the RICS code of measurement is not employed. Therefore, the valuation measuring practice of both banks is not consistent to each other in method of measuring practice.

4.7.2.3 Based on the application of a acceptable property valuation basis

Depending on the appraisal the basis of assessment determines the appropriate method for choice. Bases of value describe the fundamental assumptions on which the reported values will be based which includes issues like the nature of the hypothetical transaction, the relationship and motivation of the parties, the extent to which the asset is exposed to the market, and the unit of account for the valuation (IVSC, 2016). In line to this argument, international valuation experience shows that real estate valuation procedures, regarding of their purpose, should be depend on a recognized valuation basis (TEGoVA, 2016). Real estate appraisers are expected to know exactly what type of value they are looking for, who they are finding it for, and the purpose of the valuation. Without this knowledge, the resulting number is meaningless and can be taken out of context and misinterpreted (Blackledge, 2009).

However, valuers in the banks revealed that in Addis Ababa there is limited empirical research about on how to outline the appropriate use of valuation basis. This is because there is no legal framework of mortgage/pledge valuation frameworks and professional associations that independently regulates the valuation basis in the process. As a result, the banks prefer to undertake their own internally prepared guidelines as the best suit for their financial purpose against of the international practice. The banks also never considered the statutory guidelines and rate determination of property value. This is because the government does not develop property market evidence of property transactions. For a similar property and purpose of valuation, banks produced different results due variation of inputs employed by each bank. This influenced banks not arrive at similar market value during loan security. Moreover, banks follow estimation without any assumptions of probable price of a property at the open market usually reducing risks to the advantage of their financial assignment. Surprisingly, according to the desk study, as the properties given for collateral are to entre forced sale; so, the exchange price of the property is not considered in the process. Only the cost inherent to produce the building is estimated traditionally, without any assumptions of marketability of the entire property. Unlike to Awash bank, Dashen bank tried to consider the returns from commercial property so as to reach at the market price;

however, basis of valuation is not considered. This mis leaded the market value of the property yet. In this regard the study argued that, whatever a type of property under a similar purpose of valuation the banks do not recognize basis of valuation.

4.7.2.4 Based on method of valuation

According to the literature the valuer's expertise and training, local standards, market requirements and available data determine which method of valuation should be employed for the valuation assignment. According of EMF (2009) in countries such as Belgium, the market value is used for valuation for mortgage lending purposes. For residential properties, the cost and comparative methods are mainly used, while for other types of real estate the income and comparative methods are normally preferred. The three approaches are not mutually exclusive, with the use of more than one approach for cross-verification is encouraged, particularly where valuation inputs are limited (Parker, 2016). In the case of Awash bank due availability of relevant comparative database in the country, cost approach is adopted for all classes of properties mortgaged as loan security. Similarly in the case of Dashen bank a senior valuer in the bank stated that because of the constraint on availability of reliable sales evidence in the city, imperfect and infancy of property market in Ethiopia, it is difficult to make the bank valuation consistent across the banks. Thus, banks employ only cost method of valuation and rarely income approach for especial commercial properties. In spite of the reason for availability of relevant data for selection of cost approach as an independent approach for valuation of collateral properties, however, it is not consistent to literature; because according to the literature the cost approach assumes the value of the property is inherent in the cost to create the property less wear and tear and depreciation (Miller & Geltner, 2004). The detailed cost of construction of a property is not accepted. Also, as the existing method of calculation in cost approach is not based on scientific procedures; it doesn't indicate market value(value-in-exchange) because the appraised property will lose its current value through collateral period. To reach at actual market value of the subject property, unlike to Awash bank, Dashen bank fixes values based on the existing development of the neighborhood and considers the wear and tear and depreciation of buildings which is near to the principles under international practices. A property constructed expensively could not generate higher return than another constructed in cheap cost; this is usually emanated from disregarding the highest and best use of properties under collateral. Finally, the study argued that the banks couldn't predict the market value of all collateral properties.

4.7.2.5 Based on land valuation

According to the review the legislation of land under the supreme law of Ethiopia about land ownership leads to confusion. It recognizes that the ownership of land is ultimately vested by the state. The private holders are only granted to a certain land use right against a lease term. On the other hand, the constitution under article 40 sub article 3 declares the joint ownership of land to

nations and peoples of Ethiopia and the government (FDRE, 1995). In this regard the study argued that the constitution does not prohibit land from being taken as mortgage or collateral security. However, valuers in the banks revealed that land as it is not qualified as a loan security in terms of collateral. But they consider land value in the loan assignments. The banks consider it even at a lower degree of value.

In the case of Awash bank, the market indicative estimation of land holding rights to real properties owned on permit basis in Addis Ababa are estimated based on prepared location value table per manual, which is a function of plot grade & plot area range which then by selecting the corresponding value of land use right which is the market value indicative is estimated in Birr/m2. The manual determines the land grades based on the guidelines developed by the bank itself. The guidelines used for the land grade are as follows: first grade is of the distance of property line is 100m from the major road; second grade is 150m from the end limit of the first-grade plot; the third grade should be 350m from the end limit of the second-grade plot; and any plot areas located beyond the end limit of the third-grade plot should be categorized as fourth grade plots.

Whereas in the case of Dashen bank, Land use rights in the manual are carried out, in such a way that the location value fixing of the land shall be taken from the unit rate list applicable for the year of estimation and the grade shall be based on land grade indicated on Land Holding Certificate (LHC) or the grading is outdated which doesn't reflect the current development, the Engineer may fix the land grade based on the existing development status of the neighborhood, proximity to the main road and other factors.

The similarity between Awash bank and Dashen bank is because of both using internally prepared land value table which is a function of plot grade and plot area range. In this regard the difference observed in the assessment is that Awash bank begins first grade for plots up to 100m distance from major road whereas in the case of Dashen bank begins up to 50m from major road. Moreover, Awash bank has four plot grades based on the distance of property line from major road; whereas Dashen bank has five plot grades based on the land grade determined on the title deed. The unit rates correspondent to the plot grades of both banks are also different based on each bank's internal manual.

There is also another difference between Awash bank and Dashen bank because of both banks estimate value of lease hold properties differently. In the case of Awash bank, for plots permitted as lease basis the property estimation department does not need lease agreement documents for property appraisal. The valuer simply gives remarks related to lease arrears on the title deed to the credit department of branch banks. Whereas in the case of Dashen bank, for plots of land held on lease basis from the Government, the value of landholding right will be calculated by deducting liabilities on the title to the

Lease Office from the indicative value calculated using the empirical equation, in proportion to the remaining lease period. In this case, when the lease value of the property exceeds the location value determined as per manual, then the bank doesn't consider location value, which comes to be zero value. Finally, the study argued that both Awash bank and Dashen bank employ independent land valuation grading method; consequently, resulted different values of a similar property and purpose of valuation.

4.8 Comparison of estimation of values of collaterals between Awash bank and Dashen bank

The difference observed in the assessment of location value, increased variation of value report between the two banks. As Awash bank begins first grade for plots up to 100m distance from major road whereas in the case of Dashen bank begins up to 50m from major road. Moreover, Awash bank has four plot grades based on the distance of property line from major road; whereas Dashen bank has five plot grades based on the land grade determined on the title deed. The unit rates correspondent to the plot grades of both banks are different based on each bank's internal manual. There is also another difference between Awash bank and Dashen bank because of both banks estimate value of lease hold properties differently. In the case of Awash bank, for plots permitted as lease basis the property estimation department does not need lease arrears. Whereas in the case of Dashen bank, for plots of land held on lease basis from the Government, the value of landholding right will be calculated by deducting liabilities on the title to the Lease Office from the indicative value calculated using the empirical equation, in proportion to the remaining lease period. In this case if the lease arrears exceed location value, the valuer rejects the location value; only depreciated value of the building is considered for loan security.

The difference is also observed in application of cost approach for similar purpose of valuation. In the case of Awash bank, valuers employ plinth area method for all operating properties irrespective of wear and tear and depreciation of building elements. Unlikely Dashen bank calculates depreciation of building elements and adding the location value based on existing development and lease arears of the land holding right. Therefore, the difference observed in land valuation and building value calculation resulted variation of value for similar property and purpose of valuation. According to the desk study in the banks, the collateral values of properties estimated by each bank are described as follows;

Table 57: The value results of selected collaterals by Awash bank

Awash bank result	Collaterals	Property				
		A	**B**	**C**	**D**	**E**
	Plot Areal(M^2)	250	1,140	106.44	2,000	1,240

Plot Grade	second	first	second	third	first
Distance From the Main Road	250m	near	250	350	near
Purpose of valuation	Collateral	collateral	mortgage	collateral	collateral
Valuation method used	Cost method	Cost method	Cost method	Cost method	Cost method
Building Value	11,925,200	165,831,000	2,554,560	12,844,320	7,817,500
Location Value	9,416,750	69,540,300	4,009,275	21,224,000	27,587,740
Total value	21,341,950	235,371,300	6,563,835	34,068,320	35,405,240
Forced Sale Value	21,000,000	235,000,000	6,563,835	34,000,000	35,000,000

Source: Awash bank (2021), computed using Microsoft excel

Table 58: The value results of selected collaterals by Dashen bank

	Collaterals	**Property**				
		A	**B**	**C**	**D**	**E**
Dashen bank result	Plot Areal(M^2)	250	1,140	106.44	2,000	1,240
	Plot Grade	third	first	third	fifth	Fourth
	Distance From Main Road	250m	near	250	350	near
	Purpose Of Valuation	collateral	collateral	mortgage	collateral	collateral
	Valuation Method Used	Cost method	Cost method	Cost method	Cost method	Cost method
	Building Value	20,255,384	346,707,949	2,798,201	28,818,459.44	5,600,000.
	Location Value	5,872,000	35,747,978	3,512,520	0	23,446,628
	Total Value	26,127,384	382,455,927	6,310,721	28,818,459.44	29,046,628

Forced Sale Value	26,127,384	382,455,927	6,310,721	28,818,459.44	29,046,628

Source: Dashen bank (2020) and computed using Microsoft excel

Property A: In the case of residential building (property A) as the *table 57* indicated, the adjusted value of property A estimated by Awash bank is in the sum of 21,341,950 birr. As the *table 58* indicated, the adjusted value of the subject by Dashen bank is 26,127,384 birr. Finally, the study argued that the value result of the Dashen bank exceeded the result produced by Awash bank by 4,785,434 birrs. This revealed that the value variance between the two banks is 18.3%.

Property B: In the case of income producing properties (property B), as the *table 57* above indicated, adjusted total value of property B by Awash bank at the date of appraisal is 235,371,300birr. As the table *table 58* above portrayed, according to Dashen bank manual the total value of property B is sum of 382,455,927 birrs. Finally, the study argued that the value result by Dashen bank exceeded the value result produced by Awash bank by 147,084,627 birr. This indicated the value variance of property B between the two banks is 38.45%.

Property C: In the case of property C (condominium flat), as the *table 57* above indicated the adjusted total value of property C (condominium flat) is estimated as 6,563,835 birr. As the *table 58* above indicated the adjusted total value of property C is 6,310,721 birrs. The study argued that property C is undervalued by Dashen bank manual by 253,114 birrs. This indicated that the value variance of property C based on the manuals of the two banks is 3.86%.

Property D: In the case of warehouse (property D) as the *table 57* above indicated, the manual of Awash bank estimated the adjusted total value of property D as 34,068,320 birr. As *table 58* above portrayed, according to Dashen bank the location value of property D is -4,303,133 birr. The negative result of land value indicated that the lease value of property D exceeded the location value of land per bank manual by 4,303,133 birr. In such circumstances, the location value of subject property is concluded to be zero. The bank only estimated the building value for collateral. Thus, adjusted total value of property D is estimated as 28,818,459.44 birr. Finally, the value result of property D based on Dashen bank is undervalued by 5,249,860.56 birr compared to the result by Awash bank. This indicated the value variance of property D between the two manuals is 15.4%.

Property E: In the case of fuel stations (property E) as the *table 57* above indicated, based on the Awash bank manual the adjusted total value of property E is 35,405,243 birrs. According to Dashen bank the adjusted total value of property E excluding tankers and mechanical canopies is estimated as

29,046,628 birrs (see *table 58*). Finally, the study argued that the value of property E based on the Dashen bank manual is undervalued by 6,358,615 birrs compared to Awash bank manual. This indicated that the value variance of property E between the two banks is estimated as 17.95%.

Finally, the study argued that banks determine different grades for a similar property under a similar purpose of valuation based on their internal valuation manual. The different plot grading determined by the banks implies that the rate given for those plots is also different. For instance, for properties selected in the case study A, B, C, D and E, the plot graded determined by Awash bank is *Second, First, Second, third* and *First* respectively. Thus, the total location value estimated are 11,925,200 birrs; 165,931,000; 2,554,560 birrs; 12,844,320 birr and 7, 817,500 birrs respectively. On the other hand, Dashen bank graded those plots as *third, first, third, fifth* and *fourth* respectively. Thus, the total location value estimated are 5,872,000birr; 35,747,978birr; 3,512,520 birrs; 0 birr and 23,446,628 birrs respectively. Finally, the variation between the two banks is summarized as follows;

Table 59: Value variation of similar collaterals for similar valuation purpose between the banks

Collaterals		**Property**				
		A	**B**	**C**	**D**	**E**
TOTAL VALUE (birr)	Awash bank	21,341,950	235,371,300	6,563,835	34,068,320	35,405,240
	Dashen bank	26,127,384	382,455,927	6,310,721	28,818,459	29,046,628
Variation between Awash bank and Dashen bank (%)		18.3%	38.45%	3.86%	15.4%	17.95%

Source: Awash bank (2021) and Dashen bank (2020)

As the *table 59* above indicates the because of the different inputs in the determination of location value and building classification by the banks implies that whatever a property is similar in type and purpose of valuation the banks produced different results of location value (see table 57 and table 58). According to the table 57 and 58, even though the plot grades of a collateral is similar, the banks employ different rate; for example, the plot grade of collateral B is first grade in both banks but the value estimated between the two banks varies in 38.45% (see table 59). Moreover, the banks gave different grades and rates of land use right for property A, C, D and E in a similar location. Thus, the variation between the banks is 18.3%,3.86%,15.4% and 17.95% respectively.

Consequently, the value variation increased an odd competition and application of independent valuation basis and methods which resulted significant variation of offer value among lending banks that influenced customers to check different banks before settling for good offer. This is followed by banks which estimate high value encourage customers; where as others banks which undervalued properties and take collaterals for forced sale discouraged the customers in a market. As a result,

customers discouraged by the collateral estimation usually shift to better transaction of sales by local brokers in search of high transactions which is significantly affecting loan investment.

4.9 Values of properties from the market on the assumptions of international valuation practices for collateral

As banks follow estimation without any assumptions of probable price of a property at the open market usually reducing risks to the advantage of their financial assignment. The market value basis of valuation is disregarded by members of Ethiopian bankers association which is incompatible to the international practice. Surprisingly, according to the desk study, as the properties given for collateral are to entre forced sale; but the exchange price of the property is not considered in the banks. According to the international valuation practice, the basis of mortgage and collateral valuation is market value and the appropriate approaches are combination of market comparison (sales comparison), income and cost approach based on the type of property (EMF, 2009). The market approach is the most widely used and accepted valuation approach in real estate valuation practice for a variety of purposes. It is based on the theory of value, which states that the value of real estate is based on the views of typical buyers and sellers of that property, regardless of cost, produce, or wear and tear (Miller & Geltner, 2004). It is based on the price equilibrium principle (IVSC, 2017). As can be seen from the comparison, in the market approach the degree of similarity between the subject and recently sold assets is fundamental as ownership is not uniform (IVSC, 2017).

In many European countries, including Finland, France, Norway, Sweden and the United Kingdom, the cost approach is used for specialty properties with no evidence of a transaction and no useful or relevant evidence of a recent sale transaction due to the specialized nature of the asset (RICS, 2017b, Adair et al., 2003). In other European countries such as Germany, Switzerland, Spain, Norway, Belgium and Portugal, it is more commonly used that the exchange value is the weighted average of the two outcomes, mainly in combination with other approaches. (Adair et al., 2003). In these countries, cost-based figures are retained for control when the final results of the assessments are in near-perfect agreement with the results of the comparative approach (Adair et al., 2003).

Practically in Addis Ababa Ethiopia, however, banks argue that land does not qualify as a loan security. Therefore, the value determined by the bank engineers does not necessarily reflect the open market price of the property being valued usually reducing risks to the advantage of banks' financial assignment. The argument of the banks about nonmortgage ability of the land is emanated from the existing property law under the constitution (FDRE, 1995). For the purpose of this study the researcher collected relevant sales evidence about the selected collaterals which best describes the mortgage ability of collaterals. The study presented if the value estimated by the banks vary from the actual market value as follows;

Table 60: Comparison of collateral value with the actual market value from market comparison of international practice

	Property				
Collaterals	**A**	**B**	**C**	**D**	**E**
Awash bank	21,341,950	235,371,300	6,563,835	34,068,320	35,405,240
Dashen bank	26,127,384	382,455,927	6,310,721	28,818,459.44	29,046,628
Actual market	43,116,935	541,294,122	8,787,221	67,407,374.48	72,533,691
Market Value variation with Awash bank (%)	51%	56%	25.3%	49.46%	51.2%
Market Value variation with Dashen bank (%)	39%	29%	28.18%	57%	59.9%

Source: Awash bank (2021), Dashen bank (2020) and Field survey (2022)

According to the EMF (2009), unless the subject property is a special use property where similar transaction evidence is not available it is better not to be valued using the cost method of valuation for collateral. As the results in the table above indicated, the cost method in the banks could not yield positive result during collateral years. However, the values of the properties increase and get positive if they are appraised using market comparison approach under the study. As the *table 60* above indicated, the market price of property A, B, C, D, and E using market comparison exceeded the Awash bank assessed value by 51%, 56%, 25.3%, 49.46% and 51.2% respectively. Likely, the market price of A, B, C, D, and E using market comparison exceeded the Dashen bank assessed value by 39%, 29%, 28.18%, 57% and 59.9% respectively too. This indicated that, compared to market comparison both banks undervalued the subject properties(collaterals). This is because the banks did not consider any basis of valuation and sales evidence for the assignment. The value of properties assessed by banks decreased throughout the collateral years; which is significantly a weak method to secure loans from any defaults. Moreover, the depreciated replacement cost method of building valuation and determination of land value of land use right practiced by the banks are also not compatible to the generally accepted standards. In addition, because of absence of income and expense data of subject and comparable property, the banks did not apply income capitalization method for commercial properties. Also, as the existing practice in the banks are non-scientific and unregulated which neglected the exchange price of properties under collateral, for a similar property

and purpose of valuation. Therefore, the value estimated by the banks could not predict the actual market value in a similar location. Finally, due the value reports from the banks do not encourage property investors; customers usually shift to better transaction of sales by local brokers in search of high transactions which is significantly affecting loan investment.

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CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

Accordingly, to select the appropriate basis on which value to be established and valuation methods, the literature revealed, in most cases, the basis of mortgage and/or collateral valuation is market value. However, in the case study area, the existing land law under the constitution prohibited private ownership and mortgaging of land in open market; thus, banks argued that land is not qualified as a loan security. Thus, the banks did not establish any basis of valuation for collateral purpose. The value produced by the bank engineer need not be exchange price of the property. The main purpose of valuations by banks is not to estimate the market value of properties. Thus, the amount of loan provided to borrowers is not based on the market value of the property but on securing the bank from risk as much as possible to ensure the banks can get their money back in case of default.

According to the literature the appropriate method to determine the actual market value of a collateral property should be checked through the combination of comparative sales, income and cost methods based on the type of property under collateral. However, practically, the appropriate method used in banks is cost method due to its suitability to the property market in terms of availability of relevant comparative cost data, the difficulty in updating rental rates of buildings, and lack of stability in the Ethiopian property market. Moreover, as valuers in the banks are civil engineers and construction technology management professionals; and once cost data is available; the method is best suited to reach at the estimation of cost replacement new of the property. Moreover, lending banks do not take rates from the reliable data bank such as responsible government institutions due to absence of legal framework that guides a standardized valuation system; thus, it influenced banks to rely on a nonscientific method which is likely to misrepresent the market value of a collateral property. Thus, properties are compulsorily undervalued by the lending banks and restricts the borrowing potential of investors and firms when properties are taken as collateral for loan security.

As the study indicated that value obtained from the valuation process not only depends on the method of valuation & purpose of valuation, but also on the person conducting the valuation which is the valuator. As valuation is a combination of knowledge and skills that accumulated from studies and job experience which blend together the art of seeing, appreciating and analyzing the subject property and value contributing factors, the valuer role will be to advise as what would be the best figure obtainable for a given market, at specific date so the qualification of the valuator is a prime factor in the process. In the case of the study civil engineering and construction technology management is considered as qualified in the banks. Banks believe professionals possess and be competent in calculation, measurement, and knowledge of building construction materials relative to other

professions. The researcher also found that the field of property appraisal is an emerging profession in few government universities such as Ethiopian institute of architecture, building construction and city development, Bahirdar university, Dire dawa university and Ethiopian civil service university in degree and masters programs. This indicated that although there is demand of the profession in the city, supply is not obtainable. The study also has found that there is not certification or licensing for property valuator but it is very important for the growth of the profession. According to the literature, valuers may be either internal (employed in a mortgage bank) or external to the lending institution. The legislation draws up a number of criteria for non-employees to carry out valuations for mortgage banks. In practice, estate agents typically carry out valuations for mortgage banks.

Internationally, in order to secure the mortgage, the assets will be valued at or less than the present-day marketplace price under which it may be offered under private contract among a willing seller and an arm's length buyer at the date of valuation. The price of the collateral shall be primarily based totally at the price of the assets and the nature and quantity of the pledge of the assets taking into account the life of prior claims.

In Addis Ababa, banks are allowed to follow uniform standard by Ethiopian bankers' association manual for secured lending providing that the basis of value should be market value. They employ more or less similar procedures regarding requirement of minimum relevant document and carrying out property valuation for collateral in the process. However, in most cases engineers in the banks estimate value of lease hold properties differently. In the case of Awash bank, for plots permitted as lease basis the property estimation department does not need lease agreement the valuer simply gives remarks related to lease arrears on the title deed to the credit department. Whereas in the case of Dashen bank, Land use rights in the manual are carried out, in such a way that the location value fixing of the land shall be taken from the unit rate list applicable for the year of estimation and the grade shall be based on land grade indicated on Land Holding Certificate (LHC), or the grading is outdated which doesn't reflect the current development, the Engineer may fix the land grade based on the existing development status of the neighborhood, proximity to the main road and other factors. For plots of land held on lease basis from the government, the value of landholding right will be calculated by deducting liabilities on the title to the Lease Office from the indicative value calculated using the empirical equation, in proportion to the remaining lease period. In this case, when the lease value of the property exceeds the location value determined as per manual, then the bank doesn't consider location value, which comes to be zero value.

Moreover, the study revealed that for a similar property and purpose of valuation banks determine plot grades differently; followed by different inputs for the estimation of location and building value. In the case of Awash bank, the manual begins first grade, for plots up to 100m distance from major road. In the case of Awash bank valuers estimate the improvement value using plinth area method for operating properties. Whereas in the case of Dashen bank, the manual begins first grade, for plots up

to 50m distance from major road. For operating properties, valuers use depreciated replacement cost method for operating properties. However, the two banks similarly use bill of quantity method for under construction properties. But the rates determined by each bank is different yet.

Generally, the study indicated, as the manuals of banks revealed that because of the constraint on availability of reliable sales evidence in the case study area, absence of legal framework, imperfect and infancy of property market, it is difficult to make the bank valuation consistent to the generally accepted international valuation standards. As a result, the bank only employs cost method of valuation for all properties during loan security. In both banks, the valuers rely on cost approach for all classes of properties mortgaged as loan security. Finally, the study conclude that the existing valuation practice of banks couldn't predict marketplace price of collaterals.

Above and beyond the conclusion, the study faced limitations to assess all aspects of the valuation practice in the case study area. The study undertaken was not easy as it needs high level of information confidentiality. Particularly, it was difficult to get relevant data to be used as input to the study. It was also difficult to find written literatures in related with the practices of valuation in Ethiopian context. Inadequacy of the practicing firms on property valuation, lack of specialized professionals in the particular area to get further interview, lack of produced property valuation results and reports, time constraint in preparing the study is also among the limitations of the study. Thus, the aim of the study was limited in assessing the particular methods and basis of the lending banks and consistency of practices followed by comparing the estimation of values by the banks with the actual marketplace price.

5.2 **Recommendations**

This study was intended to study the real property valuation practice of banks in Addis Ababa for collateral which was a case study in selected banks. As the study assessed the existing practices and their consistency between them and the generally accepted practice, the researcher gives recommendation based on the findings as follows:

- **Regarding** appraisers: Appraisers must have a good working knowledge of the relevant laws in order to successfully carry out the required assessments. The valuers should have adequate educational/professional qualifications, evidence of technical competence; membership in professional associations demonstrating commitment to ethical standards; sufficient up-to-date local, national, and international knowledge of asset types and their respective markets. Governments should recognize the importance of the profession to the economy of the country and must play a role in expanding university-level research and producing skilled and internationally competitive professionals in the field. Since property appraisal includes not only measurement and calculation, but also accounting, economics, planning, etc., so banks shall distinguish the difference between hiring professional valuators a construction management and technology, civil engineer and/or other as value maker/ checker so as to select the most qualified appraiser for bank assignment.

- **Regarding guidelines and standards:** banks should align valuation methods with the generally accepted methods and address the problem of non-conformity to international standard and best practices. Considering the international standards for the purpose of collateral valuation gives points of reference for valuation results; thus, property appraisal standards in banks need to harmonize with each other so as to make a strong single benchmark of common standards to which every country consider it as a reference of the practice.

- **Regarding the basis and methods of valuation:** Commercial banks should not ultimately depend on cost method of valuation; purpose of valuation during loan security should be to determine the exchange price of appraised property. The selection of appropriate method shall be at least based on the type of property and professional skills of the valuator. It shall not only be based on protecting the bank interest by not taking any risk but customer satisfaction shall also be considered by providing market representative value.

- **Regarding the legal frameworks:** The government should revisit the land property law of the country. The existing land law under the constitution shall permit private ownership of land and mortgaging of land in open market, consequently banks will argue that land is qualified as a loan security. External consultants engaging in property valuation in this regard shall be accredited and regulated to establish relevant market data for government. Moreover, the bankers association should rely on market references updated by the state.

- **Regarding reducing variations of value results:** To minimize variation of results for a property during collateral, the practice of property valuation should consider the minimum standards of international practices. Government should assess the market and develop the reliable data bank (and/or updating rental rates of land and buildings). It is better to establish property market database on sale price, space rent, construction materials cost, lease values and all other relevant information and digitalizing these to make exchange of market related information between banks easy. Moreover, it is better to establish platform for experience sharing about the valuation among banks. The banks should prepare regular training program for their appraisers.

  Member banks of EBA should use consistent standard and guideline and parallelly increase frequency of updating rates three times a year because of the current property market of the city is not stable and predictable; so, it’s better to reduce value variation for a property under a similar purpose of valuation. It is better to involve external third-party property consultants as value maker or checker to reduce discrepancy and partiality.

  Additionally, as property valuation is becoming the basis for collateral credit decisions, financial reporting of multinational companies across border property investment, securitization of real estate and the like, there is an increase for valuation requesting which enhanced a great competition between

lending banks. This competition increased the application of independent valuation basis and methods which resulted significant variation of offer value among lending banks that influenced customer to check different banks before settling for good offer. Thus, banks should adopt standardized uniform procedure to minimize variation in offer value and make it representative of what the actual market offer price by giving customer satisfaction and securing loan recovery.

Further research areas

Findings of this research such as regarding, appraiser/valuator, guidelines and standards, basis and method of valuation, legal frameworks and reducing value variation can be an area of a study.

The concepts regarding limitations of the Direct comparison, cost and income method of valuation during collateral can be an area of further study.

A similar case study of the valuation practice could enhance broad understanding so it is better if regarding the practice is also studied in other commercial banks.

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Appendixes

Annex 1: Article

Assessment on practice of real property valuation for collateral in Addis Ababa: in the case of two selected private commercial banks

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Abstract

The main aim of the study is to assess the existing practice of real property valuation for collateral in the case of commercial banks in Addis Ababa; and investigate if the practice is consistent among the banks and to check if the practices are compatible to the internationally accepted principles. In order to accomplish this objective, the real property valuation practice for collateral in banks was considered as a real-life context as existing phenomenon; thus, appropriate case study method is deployed to investigate the aforementioned valuation related matters in the selected banks in Addis Ababa. The study reviewed the local and international standards, guidelines of banks, laws, published journals, researches and reports related to real property valuation. The study revealed that each bank has its own valuation manual and procedures to do valuation. In addition, it is also found that the amount of loan given to borrowers is not based on the market value of the property but on securing the bank from risk as much as possible to ensure the banks can get their money back in case of default. All commercial banks employ cost replacement method due to availability of relevant cost data, the difficulty in updating rental rates of buildings, and lack of stability in the Ethiopian property market. The depreciated replacement cost method of building valuation and determination of land value of land use right are not also compatible to the generally accepted standards due absence of income and expense data of subject and comparable property. The study recommended the need to minimize variation of value; revise the existing land law; align the standards to the generally accepted practice; develop standardized valuation framework in banks and it is also strongly recommended that valuators need to demonstrate appropriate academic/professional qualifications, and technical competence to improve the practice.

Key words: *real property, collateral, basis of valuation, valuation methods, location value*

1. Introduction

In a country where an economy is expanding in a rapid pace, property valuation plays an important role in the determination of the value of properties for different purposes (Foote & Murphy, 2007). In Ethiopia, where banks and mortgage institutions provide loans to real property developers and investors, property investors develop property in real estate through secured collateral (Aliyu, 2017). The valuation reliability and accuracy are therefore critically important for borrowers due it is a guarantee for accessing finance since credit is often provided based on the value of a property. Therefore, the major concern of banks here is how they will get their money back and this implies that the engagement between lenders and borrowers is accompanied by a certain level of risk (Karumba & Wafula, 2012). Due to this risk, borrowers assure the performance of their obligation by offering security on their property by charging the debt primarily on the property (Foote & Murphy, 2007). Thus, banks need to determine the degree by which the value of an asset exceeds the loan in providing the margin of asset cover and to increase the certainty that the asset being taken as a guarantee will cover losses in the case of loan default (Aliyu, 2017). This could encourage borrowers to make investment decision on the estimated value. In this regard, the role of professional valuers is predicting on how much money that will be advanced as loan to such real estate developers or investors.

This paper is organized in five parts. Section 2 deals with method of the study. Section 3 devoted with the existing literatures on real property valuation basis and methods. Section 4 is dedicated for results and discussion which focuses on the existing real property valuation practices in banks and the potential bases and approaches, consistency of valuation practices between selected banks and comparison of banks' estimation and actual market value of collaterals in the banks. Section 5 concludes the result and suggest appropriate valuation frameworks to real property valuation.

2. Statement of problem

In Ethiopia, as the banking sector is at its growing stage, collateral of real property is strongly challenged by absence of uniform guidelines. One of the biggest challenges is absence of theoretical and empirical literature pertaining to mortgage and collateral valuation (Asres et al., 2020). In addition, there is no valuation regulatory framework stating the valuation bases and approaches. The working manual of Ethiopian bankers' association were prepared for member banks to use similar procedures of mortgage and/or collateral valuation. However, practically, the member banks use their own internally prepared valuation guideline (Tirsit, 2018). There is also overall lack of research regarding how best to manage the valuation inconsistency among lending banks in Ethiopia (Aseres et al., 2020). Consequently, few banks often adopt the cost method; other banks adopt both the income and cost approach of valuation. The application of the existing valuation method practiced by the banks also include unavailability of up-to-date data on construction cost; inadequate data for calculation of depreciation. The method lacks specific adjustments on the price of property. This also neglects the difference between cost and value; namely that a property might be cheaper than another but generate

a much higher income. So, the method will not reveal the potential of the collateral in the property market (James, 2015). As mortgage and/or collateral is an investment in the property market and the method lacks the capacity to reflect the fundamentals of investment uncertainty for collateral; the banks have no evidence about the market characteristics. This is occurred in cases where a property has no market demand, it cannot have a mortgage value. Moreover, when the property is in its highest and best use the value of the property will also be higher when it is valued by income and market approach. However, the existing valuation method practiced by the bank's disregards market characteristics of the subject property under a valuation namely its highest and best use. The method considers the existing use value of the property. But the existing use assumption is an odd with HABU concept of market value and the international definition in the Red Book of its market value (Binyam, 2017). This is mainly occurred due absence of any guiding framework. Therefore, developing a guiding framework aligning to international practice is essential to provide reliable and accurate in banks.

3. Research objective

This paper aims to assess the bases and approaches of real property valuation, consistency of property valuation methods among banks and the value variation between the bank's estimation and the actual market value of the property. To achieve this objective, the study is therefore based on the following research questions. First, what are the existing basis and methods of real property valuation for collateral purpose practiced by commercial banks; second, which basis and methods of real property valuation are consistent across the commercial banks? And third, what amount of variation does the value assessed by the banks vary from the price what the market value offers? Based on the findings, appropriate valuation frameworks compatible to real property valuation for collateral are suggested.

4. Methodology of the Study

This study is based on depth interview and desk review research in which the researcher basically involved in collecting data from existing resources. It is predominantly relied on primary data. Primary data is collected through depth interviews, questionnaire and desk study, field observation or physical inspection and valuation of sample properties. Secondary data is gathered from documented and published sources including books, journals, annual reports and relevant documents. The data will be organized, analyzed, and interpreted using explanatory and descriptive approaches using table and graphs.

5. Literature Review

5.1 Concepts of property

The term property has many dimensions and people are not usually capable of defining it without difficulty. In its proper legal sense, property may be defined as an exclusive right to control, use, transfer an object or a thing of economic importance and its fruits, exclude all other persons from its use and enjoyment who might have unlawfully taken it (Daniel and Melkamu, 2008). Other scholars define property refers to rules that govern people access to and control of physical things (tangible

assets) like land, natural resources, and manufactured goods as well as of non-physical things (intangible assets) such as inventions or contractual rights and financial claims (Degualem, 2018). For the purpose of the study, real property can be defined as all rights, interests and benefits related to the ownership of real estate including a right of ownership, control, use or occupation of real estate which is legally recorded by legal procedures in a formal document namely a title deed or lease (Parker, 2016).

5.2 Real property valuation

A valuation according to some scholars is defined as the art or science of appraising the present value of a specific purpose of a particular interest in a property at a particular moment in time considering all the underlying economic factors of the market including the scope and extents of alternative investments in the process (Millington, 2006). Likely, others scholars define real property valuation as an art and a science of determining the most probable price of an interest or right in property encompassed in an ownership for a particular purpose at a particular point in time (French, 2003). According to Marston (1970) as cited by Binyam (2017) property valuation also defined as an art of estimating the far market monetary measure of the desirability of a particular ownership of properties for specific purpose. So, the concern in the process is to estimate the property interests which can be defined by state or the law of individual jurisdictions and are often regulated by legislation. However, as the legal system, economic development and socio-political context of nations are different in nature; the rapid growth of investment has decreased the reliability of independent national property valuation standards and guidelines; and property valuation is becoming the basis for collateral credit decisions, financial reporting of multinational companies across border property investment, securitization of real estate and the like. Along with the development of market economy and property market, the range of purposes for which property valuation is necessary has been increasing, most predominantly resulted from political, social, economic, or financial background (Maria, 2010). It is widely used in financial and other markets to assist private or public institutions decision making in the process of financial reporting, taxation, compulsory acquisition and purchasing (Asres et al., 2019).

To be considered accurate, property valuation is supposed to serve as a reliable indicator of the property´s transaction price market participants must be able to rely on it (Scarrett, 2008). However, important to keep in mind though, is that the appraiser has no possibility to find an exactly point estimate of the value; valuation does not lead to true value because all valuations are biased because of factors attributed to the property being valued; property specific and external of the property (Binyam, 2017). According to Stasiak E. (2013) the direction and magnitude of bias in the valuation is directly proportional to who pays to the client and how much he will be paid; i.e., does not ensure an exact estimate of value as there are no precise valuations. So, the assignment is about how much and in which direction the property will transact, which is a function of satisfaction derivable from the property. In line with the heterogenous characteristics of properties is widely observed, the Appraisal Institute (2013) suggests all valuation problems can be solved through the systematic application of

guidelines and procedures. In addition, appraisers must review the local market and compare the property's value to similar properties in the area to obtain an accurate estimate of its fair market value. According to RICS (2012) whether an individual is appropriately qualified to accept responsibility for being a qualified valuer one involves satisfying the international standards and guidelines.

5.2.1 Bases of real property valuation

The fundamental assumptions on which the reported value of a property is based as a basis for valuation (IVS Council, 2011; Asres et al., 2020). According to Asres et al. (2020) the valuation basis describes the basic assumptions on which the reported value will be based; and indicates the probable price of the property in the open market such as the nature of the hypothetical transaction, the parties' relationships and motivations and the extent to which the asset is exposed to the market. Moreover, it influences or dictate a valuer selection of methods, inputs and assumptions and the ultimate opinion of value. However, the appropriate selection of valuation basis depends on the purpose of the valuation. So, the valuation assignment for any purpose should be supported by a recognized basis of valuation (Asres et al., 2020). The most commonly used bases of valuation in the valuation literature are: Market value is the estimated price at which a property could be exchanged as of the valuation date between a willing buyer and a willing seller in a transaction in accordance with market conditions following appropriate advertising wherein each party has acted in a knowledgeable and reasonable manner free from any coercion (EMF, 2017). It serves as the basis for mortgage and/or collateral valuation in the majority of cases (Asres et al., 2020). It does not show an assessment of value over the longer term but only at the time of the hypothetical transaction (TEGoVA, 2016). So, to make things clear, the market value reached by appraisers should not be interpreted as the property price, but only as estimation of the market worth. However, it has its own shortcomings in certain circumstances that it is difficult to apply for unique or complex properties in thin markets (Lind, 1998).

Mortgage Lending Value (MLV) is the value of immovable property as determined by a prudent assessment of the future marketability of the property taking into account long-term sustainable aspects of the property, the normal and local market conditions, the current use and alternative appropriate uses of the property based on sustainability, avoidance of any speculation, traceability, standardization and marketability (Asres et al., 2020). So, it considers the future value of the mortgaged property which can be applied through the entire period of the loan. In stable markets mortgage lending value and market value are not different (TEGoVA, 2016). Market value goes hand-in-hand with increased bank lending and inflated property prices (Crosby & Hughes, 2011), while mortgage lending value provides sustainable value for a longer period of time (TEGoVA, 2016). Thus, mortgage lending value is likely, in most market conditions, to be below market value but offers a guide to expected underlying long-term trends in the market.

A worth (or investment value) helps to measure the benefits generated from an anticipated entity from holding an asset which does not necessarily involve a hypothetical exchange (Ermias, 2020). It is the maximum price that a known individual bidder would offer according to his specific investment

requirements but not measure the overall judgement of the market on the property (TEGoVA, 2016). It is distinguished from market value, since market value is impersonal and detached from a particular investor. Moreover, there are other basis of value considered in the process of valuation including market rent, fair value, special value and synergy value which reflect the hypothetical assumptions of the process and relationship of valuation parties in the process (TEGoVA, 2016; Ermias, 2020; IVS Council, 2011).

5.2.2 Property valuation approach

Valuation approaches refer to a generally accepted analytical methodologies that are in common use (IVS, 2005). But the valuation approach may well be inappropriate for different interests and different property types with different purposes, over time (Aseres, et al., 2020). Moreover, in cases where the valuer has high degree of confidence in the accuracy and reliability of a single method, they are not required to use more than one approach of valuation (IVSC, 2017). There are three internationally recognized methods of real estate valuation and they are all based on the economic principles of price equilibrium. The most commonly practiced are market, income and cost approach.

The market comparison approach assumes that property value is based on the views of a typical buyer and seller of the property (Miller & Geltner, 2004). It is based on comparing the item with other similar or similar assets for which price information is available (Parker, 2016). However, results will depend on the talent of the valuer to find reliable adjustment factors. A property being valued (a subject property) is compared with sales of similar properties that have been transacted in the open market now or that have recently been sold or let on the market (Degualem, 2018). Adjustments are then made to allow for the advantages and disadvantages of the subject property in relation to each comparable to arrive at a figure that can be considered the current market value of the subject. However, the more specialized the type of property, the less likely it is that an appraiser will be able to find a comparable property, and it is not uncommon for evidence of sales of comparable properties to be inadequate (Appraisal Institute, 2001; Millington, 2000). Millington (2000) another weakness of the sales comparison is that the purchaser of the comparable property may have special reasons and specific personal circumstances which both prompted and enabled the purchase to be made, such reasons and circumstances being completely irrelevant to others in the market place. The other problem with the sales comparison approach lies in the fact that income properties are not frequently traded, so the available sample becomes so small that it is very difficult to apply that method.

The income approach assumes that property value is based on the return requirements, current financing options and property risks of a typical investor (Miller & Geltner, 2004). According to Maria (2010), cited in Degualem (2018), it is based on the assumption that potential buyers will pay no more for the subject property than an equally desirable substitute investment that offers the same return and risk as the subject property. Therefore, the income approach is primarily used to calculate the market value of properties that generate or have the potential to generate income. It considers the subject property as an investment and its value is on the rent it will produce for the owner with the anticipation

of future benefits. This approach provides a measure of value by converting future cash flows into a single current net present value (RICS, 2012). The price paid by the buyer is determined by the income the property may generate from its investment. In this case, a property valuer assumes that the investor ultimately seeks a total return greater than or equal to the amount invested (Hungria-Garcia, 2004).

Cost method the cost approach assumes the value of the property is inherent in the cost to create the property based on land acquisition and building cost less wear and tear and depreciation (Miller & Geltner, 2004). The replacement cost method considers the possibility that, as a substitute for the purchase of a given property, one could construct another property that is either a replica of the original or could offer comparable utility. In practice, the approach also involves an estimate of depreciation for older or less functional properties where the estimated cost of a new replacement is likely to exceed the price that would hypothetically be paid for the subject property (IVS Council, 2011). Building costs, depreciation rates and land values are all estimated by referring to comparable evidence. According to International valuation standard (2005) the cost approach considers the possibility that, as a substitute for the purchase of a given property, one could construct another property that is either a replica of the original or one that could furnish equal utility. However, the cost method does not calculate market value. Instead, it calculates a replacement cost for the improvements that have been made to the land, typically in the form of buildings and ancillary manmade land uses. This approach is to be used when a value estimate via either the income capitalization approach or the sales comparison approach is not possible because of an almost complete lack of comparable market transaction information. It does not produce a market valuation (value-in exchange) as such because cost relates to production rather than an exchange, and it is often regarded as the method of last resort for this reason.

5.3 The real property valuation in Addis Ababa

According to the FDRE constitution (1995) as the right to land to own is vested by the state and the public; and hence not subject to sale, exchange or mortgage. Except for such limitation, the people have a land use right determined by law including the right to use and exploit it, to transfer by inheritance to rent or lease it, to improve it and to sell its product and finally to get compensation during expropriation. Therefore, in Ethiopia man made property right on the land are mortgageable. According to Daniel (2009) in Ethiopia there is no an independent and legally regulated valuation system and available professionals in the field of property valuation. He said that the ultimate ownerships of the land by the government and the public become the reason for the thin real property market in the country. The ministry of federal government under the urban development has given the task of developing the capacity of a valuation system in the country in the collaboration with the federal and regional government organs. In the case of Addis Ababa, the office of land development and urban renewal body of the city government at each sub city is a responsible party in the process of expropriation based on the urban property valuation and compensation regulations. In the meantime, however, the implementation of the regulations is backed with the absence and/or lack of scientific and

uniform standards of valuation methods in the country. This leads to applying of different valuation methods and compensation procedures in different regions of the country. The argument is that the lack of using standardized methods and procedures result in unfair valuation and compensation regimes whereby the equal rights of landholders provided under the constitution may be infringed upon.

Due complete lack of valuation regulatory framework stating the bases and approaches, the working manual of Ethiopian bankers' association were prepared for member banks to use similar procedures of mortgage and/or collateral valuation. However, practically, the member banks use their own internally prepared valuation guideline (Tirsit, 2018). Consequently, few banks often adopt the cost method; some adopt the market comparison approach at the same time other banks adopt the income and cost approach of valuation (Aseres et al., 2020). The application of the existing valuation method practiced by the banks also include unavailability of up-to-date data on construction cost; inadequate data for calculation of depreciation (Binyam, 2017).

6. Results and analysis

International standards, recommend that market value is appropriate basis of real property valuation when properties are taken as loan security. But in reality, banks in Ethiopia tend to use the cost approach for all types of mortgaged/pledged properties. In addition, the cost approach they use to estimate depreciation and land value is not scientific. This is because absence of legal frameworks of valuation that regulates institutions and professionals. This research will therefore present some of the discrepancies between procedures in banks for a similar purpose and property and consistency with the international standards. In actual practice banks prepare valuation in order to ascertain the loan provided by their banks is not more than the value of the property. The banks mainly focus on keeping a sufficient margin between the value of the property and the loan. Hence most values calculated by banks likely to result in a lower figure than the actual value of the property produced by income and market methods. This is because banks tend to minimize the level of risk that they are taking. Therefore, the existing valuation method mostly favors the banks' internal purpose.

Based on the depth interview, site inspection and desk review of the study in the banks, the similarities and variations are observed on major futures of the qualification and procedure employed for the valuation of property pledged as collateral which may cause differences in estimated values of properties. This section dealt on the consistency of the Awash bank and Dashen bank based on their valuation standard and guidelines practiced on the date of appraisal, in August 2022.

7. Consistency of valuation procedures practiced by the banks

7.1 Based on Minimum Qualification of Building to be held as Collateral required for the purpose

As real properties are usually held by commercial banks particularly as back-up to any risk related with the loans they grant for an investment. More or less, both Awash and Dashen Bank do not consider a real property as loan security if it is below the minimum quality of improvement on the land

specifically if they are constructed of dilapidated building elements which do not last the collateral period such as buildings made up of corrugated iron sheet shelters. The minimum qualification for the elements of the building such as foundation, floors, internal and external wall, roof, door, and windows are similar and bases it justification on such property is expected to endure providing utility within the collateral period thereby easily marketable as buildings need to last the collateral period, maintaining solid physical status and market demand.

7.2 Based on method of measurement

Fundamentally, according to the literature the essence of internationally accepted appraisal standards and guidelines, such as the RICS Code of Practice of Measurement, allows for accurate measurements, calculations of sizes (area and volume), and descriptions or specification of buildings and land on common and consistent standards to create a strong single benchmark of common standards that countries mention as a reference for practice (Parker, 2016). This is because real estate valuations are becoming the basis for decisions regarding secured lending, financial reporting by multinationals on cross-border real estate investments, real estate securitizations (Babawal & Omirin, 2012).

Awash bank manual has adopted the RICS Code of Measuring Practice, 5th Edition of the Royal Institute of Chartered Surveyors (Red Book), GEA (Gross External Area) for all practical purposes and reporting needs as defined in the code is used. Likewise, Dashen bank manual also adopted the RICS Code of Measuring Practice, 5th edition (Red Book) for all practical purposes and reporting needs of cost approach. In addition, in cases when the bank need to use the income approach for special income producing properties, Net Internal Area (NIA) as defined in the RICS Code of Measurement is employed.

As a result, the study argued that, despite the fact that, both banks adopted the RICS Code of Measuring practice in cost approach, they used each measuring practice similarly with the code. However, unlike to Dashen bank, the Awash bank didn't conduct income method; so, the net internal area as defined in the RICS code of measurement is not employed. Therefore, the valuation measuring practice of both banks is not consistent to each other in method of measuring practice.

7.3 Based on the application of appropriate basis of real property valuation

Depending on the appraisal the basis of assessment determines the appropriate method for choice. International valuation experience shows that real estate valuation procedures, regarding of their purpose, should be depend on a recognized valuation basis (TEGoVA, 2016). Real estate appraisers are expected to know exactly what type of value they are looking for, who they are finding it for, and the purpose of the valuation. Without this knowledge, the resulting number is meaningless and can be taken out of context and misinterpreted (Blackledge, 2009).

However, valuers in the banks revealed that in Addis Ababa there is no empirical research about on how to outline the appropriate use of valuation basis. This is because there is no legal framework of mortgage/pledge valuation frameworks and professional associations that independently regulates the valuation basis in the process. As a result, the banks prefer to undertake their own internally prepared

guidelines as the best suit for their financial purpose. This is also against of the guideline of the bankers' association property valuation manual. The banks also never considered the statutory guidelines and rate determination of property value. This is because the government does not develop property market evidence of property transaction. This influenced banks not employ the market value during valuation of real property for loan security. So, banks follow estimation without any assumptions of probable price of a property at the open market. They simply employ the cost method of valuation usually reducing risks to the advantage of their financial assignment.

7.4 Based on method of valuation

According to the literature the valuer's expertise and training, local standards, market requirements and available data determine which method of valuation should be employed for the valuation assignment. In the case of Awash bank due availability of relevant comparative database in the country, cost approach is adopted for all classes of properties mortgaged as loan security. In spite of the reason for availability of relevant data for selection of cost approach as an independent approach for valuation of collateral properties, however, it is not consistent to literature; because the cost approach assumes the value of the property is inherent in the cost to create the property based on land acquisition and building cost less wear and tear and depreciation (Miller & Geltner, 2004). It doesn't indicate market value(value-in-exchange) because the appraised property will lose its current value through collateral period. Thus, cost is more related to production rather than exchange price in the open market.

Similarly in the case of Dashen bank a senior valuer in the bank stated that because of the constraint on availability of reliable sales evidence in the city, imperfect and infancy of property market in Ethiopia, it is difficult to make the bank valuation consistent to the generally accepted international valuation standards. Thus, bank only employ cost method of valuation for all properties. Finally, the study argued that both banks couldn't predict the market value of all collateral properties.

7.5 Based on land valuation

According to the review the legislation of land under the supreme law of Ethiopia about land ownership leads to confusion. It recognizes that the ownership of land is ultimately vested by the state. The private holders are only granted to a certain land use right against a lease term. On the other hand, the constitution under article 40 sub article 3 declares the joint ownership of land to nations and peoples of Ethiopia and the government (FDRE, 1995). In this regard the study argued that the constitution does not prohibit land from being taken as mortgage or collateral security. However, valuers in the banks revealed that land as it is not qualified as a loan security in terms of collateral. But they consider land value in the loan assignments. The banks consider it even at a lower degree of value.

In the case of Awash bank, the market indicative estimation of land holding rights to real properties owned on permit basis in Addis Ababa are estimated based on prepared location value table per manual, which is a function of plot grade & plot area range which then by selecting the corresponding

value of land use right which is the market value indicative is estimated in Birr/m2. The manual determines the land grades based on the guidelines developed by the bank itself. The guidelines used for the land grade are as follows: first grade is of the distance of property line is 100m from the major road; second grade is 150m from the end limit of the first-grade plot; the third grade should be 350m from the end limit of the second-grade plot; and any plot areas located beyond the end limit of the third-grade plot should be categorized as fourth grade plots.

Whereas in the case of Dashen bank, Land use rights in the manual are carried out, in such a way that the location value fixing of the land shall be taken from the unit rate list applicable for the year of estimation and the grade shall be based on land grade indicated on Land Holding Certificate (LHC) or the grading is outdated which doesn't reflect the current development, the Engineer may fix the land grade based on the existing development status of the neighborhood, proximity to the main road and other factors.

The similarity between Awash bank and Dashen bank is because of using internally prepared land value table which is a function of plot grade and plot area range. In this regard the difference observed in the assessment is that Awash bank begins first grade for plots up to 100m distance from major road whereas in the case of Dashen bank begins up to 50m from major road. Moreover, Awash bank has four plot grades based on the distance of property line from major road; whereas Dashen bank has five plot grades based on the distance of property line from major road and/or land grade determined on the title deed. The unit rates correspondent to the plot grades of both banks are also different based on each bank's internal manual.

There is also another difference between Awash bank and Dashen bank because of both banks estimate value of lease hold properties differently. In the case of Awash bank, for plots permitted as lease basis the property estimation department does not need lease agreement documents for property appraisal. The valuer simply gives remarks related to lease arrears on the title deed to the credit department of branch banks. Whereas in the case of Dashen bank, for plots of land held on lease basis from the Government, the value of landholding right will be calculated by deducting liabilities on the title to the Lease Office from the indicative value calculated using the empirical equation, in proportion to the remaining lease period. In this case, when the lease value of the property exceeds the location value determined as per manual, then the bank doesn't consider location value, which comes to be zero value.

7.6 Consistency of valuation practices of banks with international practices

International valuation Standards will improve the accuracy, quality, fairness, and transparency of valuations and valuation reporting, which in turn will lead to greater confidence and reduce financial risk for those using them. In particular, the adoption by the government of a uniform set of valuation

standards which is consistent with international best practice will provide consistency within local government assessors and national government agencies develop a wider understanding by the general public and help to provide equitable solutions to those affected by valuations. According to the literature, for a valuation to be considered accurate, it must reflect all important real estate market fundamentals and serve as a reliable indicator of the real estate transaction price, on which market participants generally rely (Scarrett, 2008). Appraisers should consider several factors to ensure an accurate property valuation (Chukwuemeka & Osmond (2014).

However, properties of similar type in a neighborhood are not usually uniform in their characteristics such as in size, shape, and other physical and economic attributes and thus some might be superior or others might be inferior in comparison. This is because the variations of values of properties in the same neighborhood in the case study area is due to site-specific particularly location of a property from amenities, infrastructures, planning acts (land use regulation) and property specific characteristics such as number of stories, construction material quality and workmanship, the type of property, number of rooms, parking space, location, plot size and the like. Therefore, the true value of properties should be professionally appraised by appropriate valuation techniques. In the case of the study the methods employed are direct comparison of market evidence, depreciated replacement cost and income method (for commercial properties). To indicate the sales(market) value of each property the appropriate valuation base is market value. Thus, five properties namely; property A(residence), property B(commercial), property C (condominium flat), property D (ware house) and property E (fuel station)) are identified and valuated as follows;

Valuation of Residential property (property A) using market comparison and cost approach

As the *table 1* indicated, market adjustments by Transaction date, location, transaction condition, age, built-up area and land holding type adjustment procedures are applied using Microsoft excel. The adjusted sales price is computed using excel function=FV (rate;nper;pv) from this the *rate* is sales price growth, *nper* is the number of time indicating the variation of prices in months, and *pv* represents the present value(sales price of the comparable property). Based on the data the study recorded the variations of market price in the neighborhood near to property A (subject property). Thus, the prices changing according to growth rate recorded by this study is 7.8% per month (Field survey, 2022). The adjusted sales price per m² is calculated from the average adjusted prices of comparable prices =40,381,233.73 birr for comparable 1; 43,450,894.08 birr for comparable 2 and 43,450,894.08 birr for comparable 3. The adjusted price/m² of subject is calculated as AVERAGE (40,381,233.73: 43,450,894.08: 43,450,894.08). Finally, the adjusted sales price of the subject property is 43,116,935.12 birr.

Table 1. Net adjustment of sale price of property A

	Subject property	comparable 1	comparable 2	comparable 3

Previously Adjusted Sale Price		40,381,233.73	43,450,894.08	43,450,894.08
Plot Area(M2)	250	260	240	240
Adjusted Sale Price/M²		155,312.44	181,045.39	181,045.39
Average Sale Price/M²	172,467.74			
Indicated Market Value of Subject Property	43,116,935.12			

source: Field Survey (2022), and computed in Microsoft Excel

According to building engineers, the economic life of the building is 30 years. The effective age of building is 6 years. The annual depreciation rate is 3.33 % . The depreciated value of property A is calculated by indexing its cost history from young comparable (property 3) as follows: The Depreciated Update Value (DRC) can be calculated as follows:$DV = P\left(\frac{100-rd}{100}\right)^n$; DV=depreciated value; rd=depreciation rate, 3.33% for 30 years; n= building age. Thus, based on the unit plinth area and land value per meter square of comparable 3, the depreciated value of property A resulted 29,084,403.5birr. Therefore, the adjusted market value of property A became 29,084,403.50-birr, 27,179,633.63 birr, 26,274,551.83-birr, 25,399,609.26 birr and 24,553,802.27 birr in the first five collateral years.

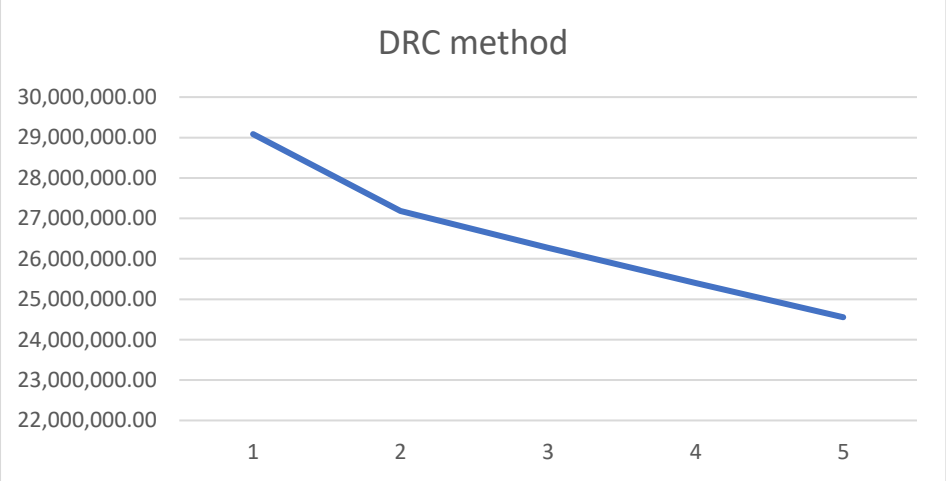

Figure 15:Value of property A using cost method

Source: Client and contractor of property A (2022), and computed in Microsoft Excel

According to the EBA manual (2015) the two methods namely cost approach and income approach are relevant to predict the market value of residential properties during loan security. and the manuals of both Awash bank and Dashen bank employed cost method of assessment because the major concern of banks here is how they will get their money back if a property held as a collateral gets any default or damaged. However, as the time of collateral increases the value of improvement decrease every year (see fig.1). This is due the fact that unless the subject property is a newly maintained, a

valuer could not determine accurate exchange price. On the other hand, with assumption of keeping the urban planning control constant, as the age of the property increase its market price increases rapidly in its highest and best use (*Field survey, 2022*). This indicated that compared to cost approach, the best suited method of residential property valuation for collateral purpose is market comparison approach.

Valuation of commercial property (property B) using market comparison, cost and income approach

As the *table 2* indicated, market adjustments by transaction date, location, transaction condition, age, built-up area and land holding type adjustments are applied. The adjusted market value of property B is 541,294,122.64 Ethiopian birr applicable only on the date of appraisal (August 2022). Based on the data the study recorded the variations of market price in the neighborhood near to property B (subject property). Thus, the prices changing according to growth rate recorded by this study is 2.49% per month. Furthermore, the monthly growth rate (2.49%) is applicable only for commercial properties in the study area of the subject property, Meskel square.

Table 2. Net adjustment of sale price of property B

	Subject property	comparable 1	comparable 2
Previously adjusted sale price		(529,046,043.08)	(527,082,725.00)
Plot Area(M2)	1,140.00	1,200.00	1036.00
Adjusted Sale Price/M²		(440,871.70)	(508,767.11)
Average Sale Price/M²	(474,819.41)		
I Indicated Market Value Of Subject Property	(541,294,122.64)		

Source: Field survey (2022) and computed in Microsoft excel

The estimation procedures of market value for subject property B in cost method is also similar to methods employed for residential property (property A). According to the site inspection, comparable property one is the youngest compared to the comparable 2; which is closely comparative to calculate the average cost per m². As the *graph* below indicated, the value of property B based on the reproduction cost of replica (comparable 1) is 351,179,898.1 birr. Its market value became 351,179,898-birr, 328,180,737-birr, 317,252,318 -birr, 306,687,816 birr and 296,475,112 birrs for the first five consecutive years of collateral.

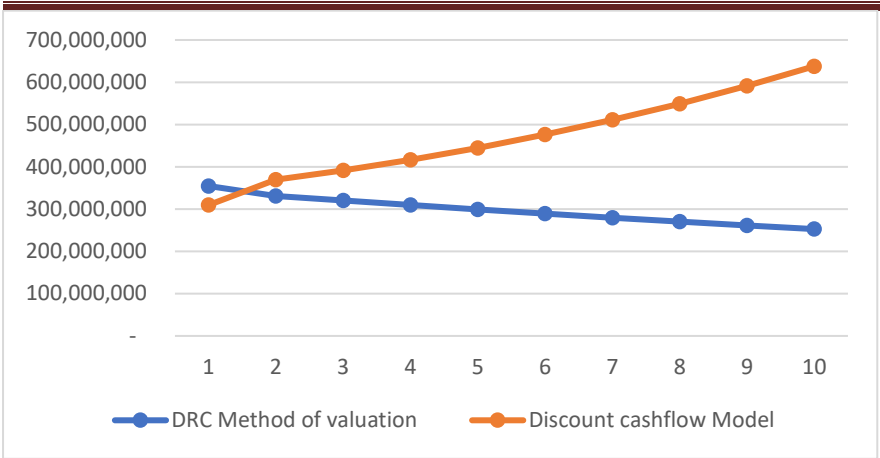

Figure 16: Income method versus DRC method of valuation of property B

Source: field survey (2022)

According to the graph (fig. 2) when the time increases the value from the income approach will be higher than the value using depreciated replacement cost method. This indicated that in the case of commercial property the discount cashflow valuation technique of income approach can predict the sale price of the subject. Thus, the study argued that value of the property using the depreciated replacement cost method could not indicate exchange price of subject at the open market. Because as the age of the property increase the improvement of the property become depreciated. Therefore, in the case of commercial properties, the value result using market comparison and income method are more appropriate to indicate the market price than depreciated replacement cost.

Valuation of condominium flats (property C) using market comparison and cost method

As the *table 3* indicated, market adjustments by transaction date, location, transaction condition, age, built-up area and land holding type adjustments are applied. The adjusted sales price is computed using excel function=FV (rate;nper;pv) from this the *rate* is sales price growth, *nper* is the number of time indicating the variation of prices in months, and *pv* represents the present value(sales price of the comparable property). The sales price of subject property is determined as the average unit price of comparable 1, 2 &3. Therefore, the unit price of the subject property based on the *table 3* is 82,555 Ethiopian birr.

Table 3. Net adjustment of sale price of property C

	Subject property	comparable 1	comparable 2	comparable 3
Previously Adjusted Sale Price		8,991,367.50	8,991,367.50	8,991,367.50
Plot Area(M2)	106.44	114.22	106.44	106.44
Adjusted Sale Price/M²		78,719.73	84,473.58	84,473.58
Average Sale Price/M²	82,555.63			
Indicated Market Value of	8,787,221.00			

Subject Property

Source: Brokers in field survey (2022).

According to the cost history indexed from comparable 2 of property C, the adjusted market value of property C in cost method is 8,200,000 birr. Based on the cost method the market values of subject are 8,200,000-birr, 7,662,973 birr, 7,407,796-birr, 7,161,116 birr and 6,922,651 birrs in the first five consecutive collateral years.

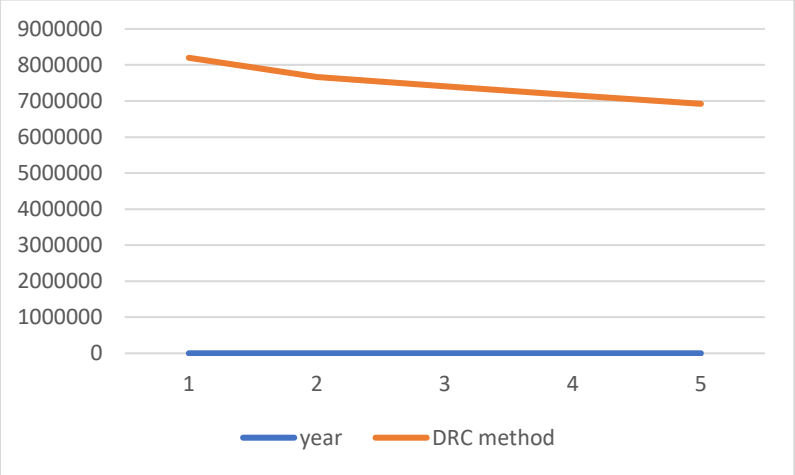

Figure 17: The market value of property C in collateral years using DRC method

Source: client of property C in field survey (2022)

As *fig 3* indicated, when the age of the property 'C' increased, the property is depreciated by 3.33% per year. Therefore, in the case of condominium flats, the decreasing value in cost method indicated that the appropriate method of valuation for loan security is not depreciated replacement cost method.

Valuation of warehouse and storage properties (property D) Using Market Comparison

As the *table 4* indicated, market adjustments by transaction date, location, transaction condition, age, built-up area and land holding type are similar procedures with the adjustments applied. The adjusted sales price is computed using excel function=FV(rate;nper;pv) from this the rate is sales price growth, *nper* is the number of time indicating the variation of prices in months, and pv represents the present value(sales price of the comparable property). Thus, the market value of property D is 67,407,374.48 rounded to 67,407,374 Ethiopian birr applicable only on the date of appraisal (August 2022). But the prices are changing monthly by 2.77% per month. Furthermore, the monthly growth rate (2.77%) is applicable only for warehouse and storage properties in the study area of the subject property, Kilinto Industrial Park.

Table 4. Net adjustment of sale price of property D

	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		63,425,642.53	68,050,914.72
Plot Area(M2)	2,000.00	1,900.00	2,000.00
Adjusted Sale Price/M²		33,381.92	34,025.46

Average Sale Price/M²	33,703.69
Indicated Market Value Of Subject Property	67,407,374.48

Source: Clients of Comparable Properties (2022) Computed by Microsoft Excel

As the property D is aged, its value decreases by 3.33% per year. Thus, the graph (fig. 4) below indicated that the sale value of subject decreased through collateral period. Its market value using depreciated replacement cost became 49,004,462birr, 45,795,105-birr, 44,270,128-birr, 42,795,933 birr and 41,370,828 birrs for the first five consecutive collateral years. Therefore, in the case of ware house and storage properties, compared to cost and income approach the appropriate basis of valuation during collateral is market value. And the relevant method is market comparison.

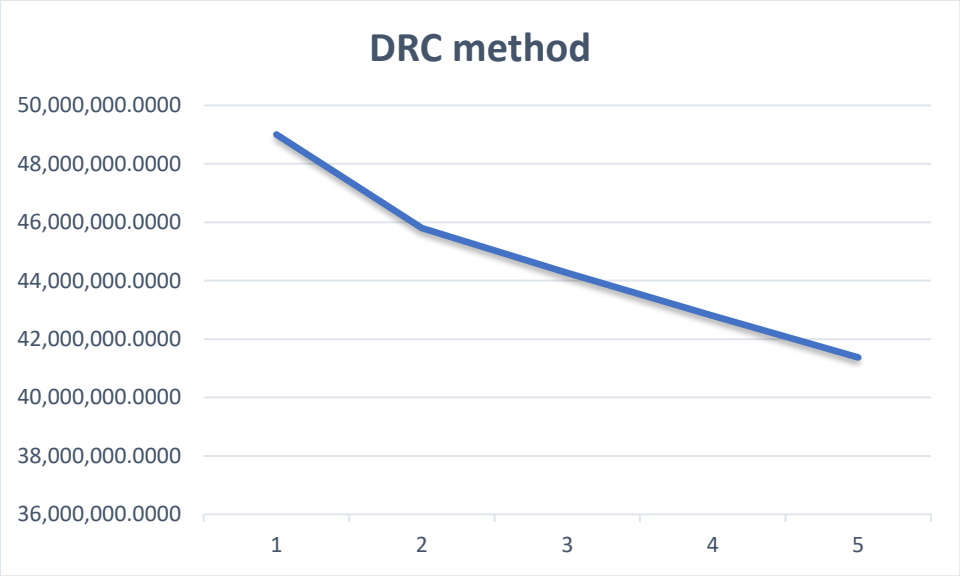

Figure:18: Value of property D in collateral years using cost method

Source: Owner of Subject Property (2022) And computed in Microsoft Excel

Valuation of fuel station Properties(property 'E') Using Market Comparison and cost method

As the *table 5* indicated, market adjustments by transaction date, location, transaction condition, age, built-up area and land holding type are similar procedures with the adjustments applied. The adjusted sales price is computed using excel function=FV(rate;nper;pv) from this the rate is sales price growth, *nper* is the number of time indicating the variation of prices in months, and *pv* represents the present value(sales price of the comparable property). The average adjusted land price per square meter of the comparable is 63,626.05 birr. Therefore, the subject property has an indicated land value as follows: Land value of property E (subject property) =The plot area of subject property*average adjusted land price per square meter.

=1,140m²* 63,626.05 birr/m²

=72,533,691.59 birr.

Table 5. Net adjustment of sale price of property E

	Subject property	comparable 1	comparable 2
Previously Adjusted Sale Price		68,326,540.81	72,844,585.53
Plot Area(M2)	1,140	1,200	1,036
Adjusted Sale Price/M²		56,938.78	70,313.31
Average Sale Price/M²	63,626.05		
Indicated Market Value of Subject Property	72,533,691.59		

Source: Owners comparable and subject and Brokers in Field Survey (2022) And Computed By Microsoft Excel

The adjusted market price of subject property based on comparable 2 of property E using cost approach is 68,850,432.90 Ethiopian birr. The graph above indicated that as the age of the property increase, the market value of property E decrease due depreciation. The value of the subject is 68,850,432.90, 64,341,341.63, 62,198,774.95, 60,127,555.74 and 58,125,308.14 birr in the first five collateral years.

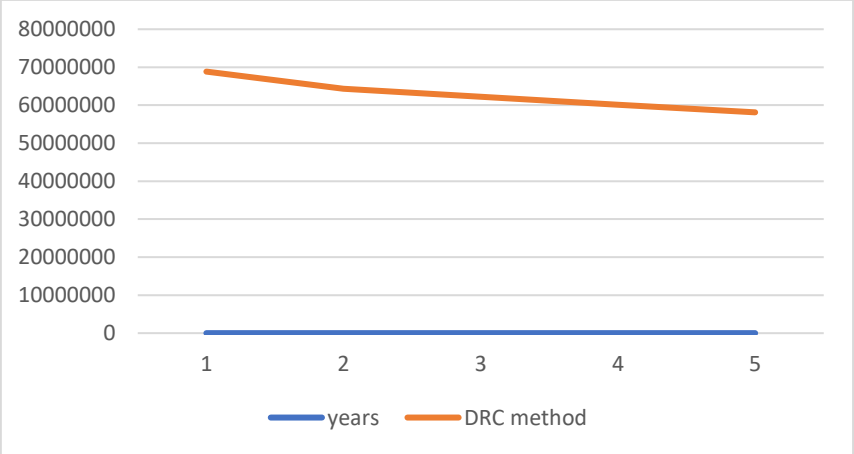

Figure 5: Market value of property E using cost method

Source: Building Contractor of Comparable Property Two and subject in Field Survey (2022) and computed by Microsoft Excel

8. Conclusion

The literature revealed, in most cases, the basis of collateral valuation is market value during perfect market. However, the imperfect property market in the case study area influenced banks to depend their own internally prepared valuation manual. The banks ultimately recognize the depreciated replacement cost approach. This is because of availability of relevant comparative cost data, the difficulty in updating rental rates of buildings, and lack of stability in the Ethiopian

property market. Moreover, as valuers in the banks are civil engineers and construction technology management professionals; and once cost data is available; the method is best suited to make adjustments to the subject property and reach at the estimation of cost replacement new of the property. However, the method couldn't predict the market value of properties held as collateral. In the process of valuation, the main purpose of valuations by banks is not to estimate the market value of properties, but to ensure the banks can get their money back in case of default. Thus, the banks did not establish any basis of valuation for collateral purpose. The reason is the existing land law under the constitution which prohibited private ownership and mortgaging of land in open market; consequently, banks argued that land is not qualified as a loan security. This indicated that the amount of loan given to borrowers is not based on the market value of the property but on securing the bank from risk as much as possible. In most cases engineers in the banks estimate value of lease hold properties differently. In the case of Awash bank, for plots permitted as lease basis the property estimation department does not need lease agreement documents for property appraisal. The valuer simply gives remarks related to lease arrears on the title deed to the credit department. For instance, the manual begins first grade, for plots up to 100m distance from major road. Whereas in the case of Dashen bank, Land use rights in the manual are carried out, in such a way that the location value fixing of the land shall be taken from the unit rate list applicable for the year of estimation and the grade shall be based on land grade indicated on Land Holding Certificate (LHC), or the grading is outdated which doesn't reflect the current development, the Engineer may fix the land grade based on the existing development status of the neighborhood, proximity to the main road and other factors. For instance, the manual begins first grade, for plots up to 50m distance from major road. For plots of land held on lease basis from the Government, the value of landholding right will be calculated by deducting liabilities on the title to the Lease Office from the indicative value calculated using the empirical equation, in proportion to the remaining lease period.

Generally, the study indicated, as the manuals of banks revealed that because of the constraint on availability of reliable sales evidence in the city, absence of legal framework, imperfect and infancy of property market in Ethiopia, it is difficult to make the bank valuation consistent to the generally accepted international valuation standards. As a result, the bank only employs cost method of valuation for all properties for the assignment. Depreciated replacement cost approach is adopted for all classes of properties mortgaged as loan security. Finally, it is not consistent to international practices.

9. Policy implications(recommendation)

Governments should recognize the importance of the profession to the economy of the country and must play a role in expanding university-level research and producing skilled and internationally competitive professionals in the field. It is better to align valuation method with the generally accepted methods and address the problem of non-conformity to international standard and best

practices. Considering the international standards for the purpose of collateral valuation gives points of reference for valuation results; thus, property appraisal standards in banks need to harmonize with each other so as to make a strong single benchmark of common standards to which every country consider it as a reference of the practice. The government should also revise the land property law of the country. The existing land law under the constitution shall permit private ownership of land and mortgaging of land in open market, consequently banks will argue that land is qualified as a loan security. External consultants engaging in property valuation in this regard shall be accredited and regulated to establish relevant market data for government. Moreover, the banker's association should rely on market references updated by the state.

10. Acknowledgement

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Annex 2. Questioners

Interview questionnaires to be answered by target participants practicing real property valuation for collateral who are active in Awash international Bank and Dashen Bank.

Introduction

This questionnaire is for the purpose of researching "Assessment on Practice of Real Property Valuation for Collateral: in the Case of Two Selected commercial Banks in Addis Ababa.". The data you are requested to provide is intended to be used in the research being conducted for the partial fulfillment for Master of Science Degree in "Urban Land and Property Valuation" from Ethiopian Institute of Architecture Building construction and City development (EiABC), Addis Ababa University. Since the data is required for research purpose your accurate and unbiased information is very important. I would like to forward my gratitude in advance and would appreciate very much your prompt responses to the following questions.

Thank you.

Agernew Aseres,

Addis Ababa, 2022

I. Case study questions

SECTION A: Questionnaires filled by target valuators who are active in the banks. Please fill in the blank space or circle in the alternative number/letter.

A. Education background;
   a) Architect
   b) Property valuator
   c) construction material engineer
   d) Accountant
   e) Urban Planner
   f) Civil Engineer
   g) Mention if any other----------

B. Organization and location of company(bank), in which you are working:
   a) Bank X
   b) Bank Y

C. Your position or title in the (bank); ----------

D. Your experience(years); ----------

E. Purposes of valuation of real property in your bank;
   a) Mortgage security only
   b) Project finance
   c) Foreclosure
   d) Mention if any other, ----------

SECTION B: Please give your opinion based on the questions humbly.

1) By whom do you believe, in terms of academic background, that property valuation should be conducted? Architect, construction material engineer, Accountant, Urban Planner, Civil Engineer or Kindly mention if it is other academic area?----------
   ----
   ----

2) What type of real property did you valuate in the past five years? ----------
   ----
   ----

3) Is the valuation rate the bank practicing is equal for all types of real properties (residential, commercial, industrial, especial use, agricultural real estates)? ----------
   ----
   If not, give the rate at which each type of property is determined in your bank? ----------
   ----
   ----

4) Is the codes of conducts of measurements (e.g. gross external area, gross internal area, net internal area) similar for each type of properties (for residential, commercial, industrial, especial use, agricultural real estates)?----------
   ----
   ----

5) What are the main differences and similarities between the valuation results of your bank and the actual values in the market? (Which one is higher)----------
6) What tolerance limit of valuation variance in percentage does your bank accepts against the actual market value of a property? ----------
7) Which internationally accepted methods/approaches of property valuation do your bank use in the valuation of real property? ----------Is it Income Capitalization, Cost Replacement, Comparative Sales Approach or/and combination of these approaches?----------Kindly mention if it is other method? ----------
8) What are the main differences and similarities between your bank and international real property valuation methods? ----------
9) Kindly mention why your bank choose to use the approach which currently using?----------
10) In your bank opinion, which factors affect the real property value and which factor is most important? ----------
11) Is it International Standard or Nationally prepared manual/Guideline (Ethiopia Bankers Association (EBA) Manual or Consultant prepared) or internally prepared by your organization itself does your organization use in valuation of property for collateral? ----------
12) What are the basic steps that your bank follows in the process of collateral estimation for unfinished property pledged as collateral? ----------
13) What is the minimum construction requirement/standard of properties pledged as collateral in your bank/ organization? ----------
14) What is the document requirement for finished or/and unfinished properties pledged as collateral in your bank? ----------
15) What are the basic steps/ process map/ that your bank follow in the process of collateral estimation for finished property pledged as collateral?----------

16) It is known that the existing land legislations in Ethiopia ignore location value for land that land is public property and, hence, no compensation should be paid by the government for its own property. So, for property pledged for collateral do your bank consider the location value in valuation process? If so, how is location value of a property is assessed?----------
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17) What do you think is the challenge and difficulties in land(location) valuation?----------
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18) Have you noticed reforms in the practice of property valuation in Ethiopia as general and particularly in your bank now days? Kindly mention if there are factors for the reform in the practice of property valuation?----------
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19) Have you ever got the chance to see a property valuated by your bank and two or more different banks in the same year and noticed any significant variation in the valuation results?

By how much the value of the property varies annually based on the assessment of your bank?
---

20) What do you recommend on valuation process of real property to minimize variation results for property pledge as collateral?----------
---
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21) What do you recommend on valuation process of real property to minimize variation results for property pledge as collateral?----------
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Annex 3. Value of selected collateral properties by Awash bank and Dashen bank

Location value of property A by Awash bank				
location factor	Grade given	plot area(m²)	value/m²	Total value of location
plot grade	1_2	250	37,667	9,416,750
Total value of location =				**9,416,750 birr**

Source: Awash international bank property valuation department (2022)

Improvement value of property A by Awash bank			
building block	Total plinth area(m²)/m³(volume)	value/m²(m³)	Total value(birr)
block 1	570	20,000	11,400,000
chequred tile with mass concrete	90	1,500	135,000
septic tank	25	3,200	80,000
number of water tank	2	6,000	12,000
fence work	105	2,000	210,000
main gate	14	6,300	88,200
Total replacement cost=			**11,925,200birr**

Source: Awash international bank property valuation department(2022)

Improvement value of property A by Dashen bank						
Floors constructed	class of construction	construction area(A)	Dep. %	Dep.Rate(birr)(B)	New replacement cost(A*B) birr	D.R.C
Basement floor	class-4	120	100	35,584	4,270,080	4,270,080
Ground floor	Class-1	145	100	35,584	5,159,680	5,159,680
First-second floor	class-1	232.6	100	35,584	8,276,838	8,276,838
Terace	Class-1	68.4	100	35,584	2,433,946	2,433,946
fence work	class-4	32	100	2,070	66,240	66,240
compound work	class-1	40	100	1,215	48,600.00	48,600.00
Total new replacement cost in birr					**20,255,384**	**20,255,384**

Source: Dashen bank head office engineering estimation department (2022)

Location value of property B by Awash bank				
location factor	Grade given	plot area(m²)	value/m²	Total value of location
plot	1_1C	1,140.00	61,000.26	69,540,300
Total value of location =				**69,540,300 birr**

Source: Awash international bank property valuation department (2022)

Improvement value of property B by Awash bank			
building block	Total plinth area(m²)/m³(volume)	value/m²(m³)	Total value(birr)
block 1	8,262.55	20,000	165,251,000
chequred tile with mass	-	-	-

concrete			
septic tank	100	3,200	320,000
water tank with stand	40	6,500	260,000
fence work	0	-	-
main gate	0	-	-
Total replacement cost=			**165,831,000**

Source: Awash international bank property valuation department (2022)

Improvement value of property C by Awash bank

building block	Total plinth area(m²)/m³(volume)	value/m²(m³)	Total value(birr)
block 1	106.44	24,000	2,554,560
chequred tile with mass concrete	0	-	-
septic tank	0	-	-
number of water tank	0	-	-
fence work	0	-	-
main gate	0	-	-
Total replacement cost=			**2,554,560 birrs**

Source: Awash international bank property valuation department (2022)

Total adjusted value of property C by Dashen bank

Building type	building class	area(m²)	unit rate(birr/m²)	Dep.%	N.R.C	D.R.C
Condominium at first floor	Class-2	106.44	26,289	100%	2,798,201	2,798,201
Location value					3,512,520	3,512,520
Total replacement cost new=					**6,310,721**	**6,310,721**

Source: Dashen bank head office engineering estimation department (2022)

Location value of property D by Awash bank

location factor	point given	plot area(m²)	value/m²	Total value of location
plot grade	3_1	2,000.00	10,612.00	21,224,000

Source: Awash international bank property valuation department (2022)

Improvement value of property D by Awash bank

building block	Total plinth area(m²)/m³(volume)	value/m²(m³)	Total value(birr)
block 1	1,016.56	12,000	12,198,720
chequred tile with mass concrete	0	-	-
septic tank	18	3,200	57,600
number of water tank	10	6,000	60,000
fence work	480	1,100	528,000
main gate	0	-	-
Total replacement cost=			**12,844,320birr**

Source: Awash international bank property valuation department (2022)

Building valuation of property D by Dashen bank

building Type	m2/m3	Dep. %	Dep. Rate	N.R.C	D.R.C	Work done value(birr)	Work done in %	Work to be done (birr)	Work to be done in %
Warehouse	1,016.56	100	28,349	28,818,459.44	28,818,459.44	28,818,459.44	100	0	0
Location value	2000		0	0	0				
Total adjusted building value = 28,818,459.44birr									

Source: Dashen bank head office engineering estimation department(2022)

Location value of property E by Awash bank

location factor	point given	plot area(m²)	value/m²	Total value of location
plot grade	1_3	1,240.00	22,248.18	27,587,743
Total value of location=				**27,587,743 birrs**

source: Awash international bank property valuation department(2022)

Improvement value of property E by Awash bank

building block	Total plinth area(m²)/m³(volume)	value/m²(m³)	Total value(birr)
block 1	120	20,000	2,400,000
chequred tile with mass concrete	200	20,000	4,000,000
septic tank	1050	1,350	1,417,500
number of water tank	0	-	-
fence work	0	-	-
main gate	0	-	-
Total replacement cost=			**7,817,500 birr**

Source: Awash international bank property valuation department(2022)

Total adjusted value of property E by Dashen bank

Floors constructed	class of construction	construction area(A)	Dep. %	Dep.Rate(birr)(B)	New replacement cost(A*B) birr	D.R.C
Ground floor	Class-1	120	100	20,000	2,400,000	2,400,000
fence work		0	0	0	-	-
compound work	class-4	200	100	16,000	3,200,000.00	3,200,000.00
Location value					23,446,628.57	23,446,628.57
Total new replacement cost in birr=					**29,046,628**	**29,046,628**

Source: Dashen bank head office engineering estimation department (2022)