ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES, MBA PROGRAM

CASH FLOW MANAGEMENT CHALLENGES AND THE ROLE OF COMMERCIAL BANKS IN CONSTRUCTION SECTOR

BY: ABDUREHIM HUSSEN

FEBRUARY, 2022
ADDIS ABABA, ETHIOPIA

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGMENT

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By: Abdurehim Hussen

APPROVED BY BOARD OF EXAMINERS

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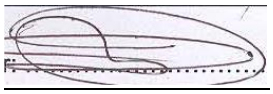
Dejene Mamo (PhD)		03/03/2022
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Declaration

I, the undersigned, declare that this study entitled *"**Cash Flow Management Challenges and the Role of Commercial Banks in Construction Sector**"* is my original work and has not been presented for a degree in any other university, and that all sources of material used for the study have been duly acknowledged.

Declared by
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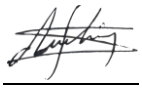
Signature: - 

Endorsement

This is to certify that the thesis entitled: *"**Cash Flow Management Challenges and the Role of Commercial Banks in Construction Sector*** "submitted in partial fulfillment of the requirements for the degree of Master of Art in Project Management, St. Mary's University and is a record of original research carried out **by Abdurehim Hussen**, under my supervision, and no part of the thesis has been submitted for any other degree or diploma. The assistance and help received during the course of his investigation have been duly acknowledged. Therefore, I recommend it to be accepted as fulfilling the thesis requirements.

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Certification

This is to certify that the thesis prepared by **Abdurehim Hussen**, entitled *"**Cash Flow Management Challenges and the Role of Commercial Banks in Construction Sector**"* and submitted in partial fulfillment of the requirements for the Degree of Master of Art in Project Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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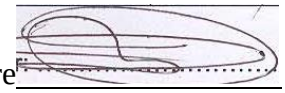
Examiner (Internal) Dejene Mamo (PhD) Signature  Date 03/03/2022

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Dedication

This dissertation is dedicated to my wife Hanan Hussen and my Uncle Nassir Jemal

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Abbreviations

APV	Adjusted net present value
BC	Building Contractors
BOA	Bank of Abyssinia
CBB	Construction and Business Bank
CBE	Commercial Bank of Ethiopia
COOP	Cooperative bank of Oromia
DBB	Development Bank of Ethiopia
FPV	Net present value of the financial cash flow
GC	General Contractors
HSB	Housing and Saving Bank
MARR	Minimum attractive rates of return
NPV	Net present value of the operating cash flow
NBE	National bank of Ethiopia
OD	Overdraft
RC	Road Contractors
SC	Special Contractors

Abstract

This dissertation presents the contribution of the Banks in the capacity building as well as project financing of the domestic construction firms which are involving in the infrastructure development activities of the country. The challenge of cash flow for contractors is well documented. Besides management related challenges, lack of capital, limited access to credit, payment delays and lack of proper regulatory framework has bedeviled the capacity of contractors to have sustainable cash flow. The main objective of this paper is to assess the significance of banks in relation to contractors' cash flow problems in construction projects in Ethiopia especially in capacity building and project financing of the domestic construction firms in Ethiopia. The study took 17 construction firms under BC, WWC, Road construction and GC where a structure questionnaire was administered to 17 firms and 8 bankers. The study employed a descriptive research design in order to meet its objective. The study found that cash flow challenges were more significant at mobilization and implementation phase and to an extent at closure. It was also established that cash flow challenges have a direct bearing on project performance given their impact on project operations such as project delays, defaulting payments and declining new contracts. The study recommended enactment of necessary policies, laws and regulations geared towards increased allocation of financial resources to construction firms in order to fully support growth through easy access. Strategies to lower lending rates to what other developed countries have been explored. Furthermore, to improve the contribution of one party to the problem of the other, they should work together to enhance the relationship between contractors, banks, and occasionally the employer.

Key Words: *Cash flow, Financing, Contractors, Commercial Banks*

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CHAPTER ONE: BACKGROUND OF THE STUDY

1.1.Introduction

This chapter presents the background and statement of the study area, also, research objectives and research questions are enumerated in this chapter. However, the chapter explains the significant of the study, scope and limitations as well organization of the proposal is stated.

1.2.Background of the study

The building and construction industry in both developed and developing countries may be viewed as that sector of the economy which, through planning, design, construction, maintenance and repair, and operation, transforms various resources into constructed facilities. The types of public and private facilities produced range from residential and non-residential buildings to heavy construction, and these physical facilities play a critical and highly visible role in the process of development Kheni et al(2008). The major participants from the building industry include the architects, engineers, management consultants, general contractors, heavy construction contractors, special trade contractors or subcontractors, and construction workers, along with the owners, operators, and users of the constructed facility.

Availability and easy accessibility of building finance in sufficient quantity will definitely accelerate all forms of property development. Building financing is concerned with the production of finance for building houses and office complexes which are basic necessities in a growing economy like Ethiopia. The benefits to be derived from a rise in building financing in Ethiopia are many and include;

1. Increased rural and urban houses for the teaming Ethiopian population.
2. The construction of industrial estate for the localization of industries and commerce.
3. An increase in employment for those in the construction industry.

The sourcing of funds for investment in building development poses a great deal of problem for the developer. This is largely due to economic instability and stringent measures imposed by most financial institutions. This is compounded by the fact that the interest rate structure has had an unfavorable impact on funding the development of building sector. Since the financing of building development is a long term project, it has necessitated the high interest rate that is being charged on the funds provided for such development purposes. Hines (1995) revealed that six major building financing methods are used across the world namely; Joint Venture, Equity and

Debt Financing, Sale-lease Back Financing, Advance Payment of key money and Sale of Securities.

Despite of the need for financial institutions basically commercial banks to construction activities, the banks will generally not allow construction loans and other facilities simply for construction firms by setting different pre-established conditions; these include collateral and the firm's track record at the bank Fanuel (2010). In this connection, construction firms working in different infrastructure development projects would infer having limited access to formal financial services given the fact that interest rate ceilings and collateral requirements for loan generate a gap between contractors and banks; hence, the situation pose for a challenge in the mutual interrelationship of the two parts where the study would be nurtured.

1.3.Statement of the problem

Ethiopia's growth and transformation requires many projects in order to accomplish the vision the country envisioned. These projects again require finance from domestic as well as foreign loans. In this regard, financial institutions are engaged in providing loans to the countries bankable projects. Projects, as crucial building blocks of development, have to be financed provided that they are technically feasible, financially viable and environmental friendly. Ethiopian construction industry is expected to expand **by 4.7% in real terms in 2021** - up from a growth rate of 3.1% in 2020. Construction activities held up relatively well despite the outbreak of the Corona virus (COVID-19) pandemic, by the fact that in most of commercial banks' financial statements the largest component of loan portfolio is development loans in terms of construction Lauwo(2012).

Over the years, the government had been the major player in the area of building and housing development in Ethiopia, by providing direct finance to the builders for previous housing schemes. This was embedded in the housing policy of past administrations but today, the dwindling nature of revenue accruing to the government, coupled with gross mismanagement and misappropriation of public funds and revenue has prohibited the ability of the government to continue to play her role as before (Nubi, 2000). The mortgage finance institutions are faced with certain problems of low level of awareness of the services rendered by the institutions, bureaucracy in the granting and disbursement of mortgage loans to the borrowers, misunderstanding of the banking terms by the depositors and the public due to the used of

technical and professional terms which are not understood by a layman and problem of repayment of loans by the borrowers.

Commercial banks have the key player in the financial sector has contributed to the development of various sectors of the Ethiopian economy by funding. Despite of the aforesaid remarkable growth in both commercial banks and construction activities, various stakeholders had been experiencing difficulties on access to finance for various development activities, and on the other hand quality of such construction projects had been questioned.According to Siraw (2014) financial problem by contractor was ranked to be the second significant factor contributing to time overrun in Addis Ababa road constructions. A similar research by Abubeker (2015) revealed that financial problem to be second ranked factor affecting time overrun as well as cost overrun.

In Ethiopia few related studies have been conducted. For instance, Shimelis (2015) assessed the major challenges of project financing by CBE from the bank's perspective. The study identified low level of skill of credit performers, absence of quality and completeness of projects proposals submitted by customers, poor credit culture of customers of the bank, lack of properly trained consultants for project feasibility study and difficulty of preparation of project proposal by customers as the major challenges of manufacturing project financing in CBE were; Getachew (2011) assessed reasons for project failures. The study identified poor preparation of the analysis, low capacity utilization, heavy costs overruns, deteriorated financial profitability, overestimated returns, underestimated costs, omission of a necessary component, optimistic projection as common reason for project failures; Fikirte (2015) examined the determinants of default in project finance. She pointed out that the major cause of project loan default are factors in connection with the character of the borrower and the management capacity problem from the side of the borrower, data or information constraint and inflation from the macro-level external environment, and monitoring and follow-up and appraisal related factors from the Bank side; and Senay (2016) assessed government priority project appraisal process. He stated that the bank has lack of a good relationship with external institution like Ministry of Trade, Ministry of Industry, and Central Statics Agency. Hence, one can draw conclusion that the banks share the same problem that need to be addressed in collaboration with other bodies concerned

It is evident from the above reviews and as to the knowledge of the researcher, none of the studies assessed the cash flow challenges contractors are facing and the role of banks in mitigating the

same from the contractors and bankers' perspective as well. Therefore, this triggered the researcher's interest to conduct a thorough study on the role of banks in construction sector in order to instill business growth and sustainability of both commercial banks and their financed construction activities.

1.4.Research Questions

The following research questions guided the study:

1. How do the cash flow challenges of contractors affect project performance?
2. How severe are payment delays and to what extent are they a challenge in the construction industry?
3. How significant is the impact of financial institutions' lending policies on cash flow challenges faced by contractors?
4. What alternative solutions could be put in place to facilitate access to project financing and eliminate delay in payments for contractors?

1.5.Objectives of the study

1.5.1. General Objective

The general objective of this study is to assess the significance of banks in relation to contractors' cash flow problems in construction projects.

1.5.2. Specific Objectives

The specific objectives of the study are the following:

1. To analyze cash flow challenges of construction projects.
2. To assess the impact of payment delays on construction project operations.
3. To identify challenges of accessing financing from commercial banks
4. To explore alternative solutions to address challenges of accessing financing and delay payments by contractors.

1.6.Scope and Limitations

Ethiopia is one of the top rate developing countries and the construction industry is widely practiced in the country. The scope is very wide but this study is limited to the contractors' cash flow problems at a project level and different means of alleviating these problems and also it comprises assessment of the role of banks in minimizing contractors' cash flow problem in construction projects. It also attempts to study contractors' relationships with financial institutions

in relation to cash flow problems during construction. It is limited to local contractors and banks. Brief reviews on types of arrangements provided for construction industry which are more relevant to contractors are made as a conceptual framework so that it can help us in identifying the variables.

Furthermore, the thesis tries to address the rate of utilization of internal sources of finance in minimizing cash-flow problem of construction projects. The study makes assessment on the different measures that the local contractors presume in solving their cash flow problems and at the same time examine the extents of collaboration existing between the local banks and contractors, and assess how far local banks are working to introduce arrangements which have not been practiced in the industry so far.

1.7.Significance of the study

Such kind of field of study is very new in Ethiopia context and will see it from practitioners, policymaker and academician use of purpose.

Practitioners

This research would provide a foundation work to the bankers such that they know how effective their lending modalities to construction sectors are and how to waive risk associated with the same. Likewise, through this study, options for construction financing identified and sec challenges pertaining to the construction sector revealed where the same would know measures to take in overcoming such challenges.

Policy Makers

The analytical facts of the research results are expected to act as bench mark to the policy makers (Bank of Ethiopia, Institute of Bankers, construction partners, etc) to come up with financing fit policies that enable banks increase their lending mechanism to the construction sector which is turning to be a backbone of Tanzania economy.

Academicians

The results of this study would add to the bundle of already existing knowledge regarding the link role of commercial banks in support of development financing in focus of construction sector. Furthermore, the study would be useful as a basis for literatures of future research as well source for research topics as will be prescribed on the forthcoming research report.

1.8.Organization of the paper

The Study is organized into five chapters. The first chapter includes brief the introduction including background of the study and the organization, statement of the problem, research questions, objectives of the study, limitation of the study, scope of the study, significance of the study and organization of the paper. The second chapter covers related literature review, the third chapter deals with the research methodology part including the research design, the study area, the sampling techniques, data gathering technique and instruments and data analysis techniques. In the fourth chapter presets the results & discussion and in the fifth chapter conclusion & recommendations of the study were included.

CHAPTER TWO: LITERATURE REVIEW

2.1.Introduction

The purpose of this chapter is to describe and document what has been written and recorded in different manuals, magazines, journals, literatures and authors about role of Banks in construction sector to present literary review in form of theoretical review, empirical review and Research gap. As well; the chapter tries to look at related articles in and around Ethiopia.

2.2.Theoretical Literature Review

The most prominent constraint the developing countries construction industry face is the difficulty to find appropriate financing for the smoothly undergoing and on time completion of project activities; i.e. cash flow problem. Forecasting project cash flow is necessary for a construction company, as it gives a chance to plan for deficit and ensures sufficient cash availability to meet the demands. Cash flow shows the contractor the amount of cash required and when it will be required. Thus, the contractor can make arrangements to secure the required cash Emad (2012). Cash flow provides cash management strategies in order to plan, monitor and control the cash shortage or surplus Melik (2010). Cash flow forecast provides a reliable indicator to lending institutions that loans made can be repaid according to an agreed program Emad (2012).A cash flow forecast develops a cash conscious culture in the company by promoting allocation, usage and control of resources effectively CIB(2000). Companies learn they need to maximize cash flow by negotiating better payment terms with project owners before contracts are signed.

2.1.1. Theories and Concepts

According to Bester (2009) the most prominent constraint the developing countries construction industry face is the difficulty to find appropriate financing for the smoothly undergoing and on time completion of project activities; i.e. cash flow problem.

Role of Banks for a Construction Industry

Choosing an appropriate financial option and implementing a comprehensive project management plan are vital for the successful completion of any construction project. Banks contribute a vital role for a construction industry by providing;

Construction Loans Including Overdraft Facilities,

A loan is the purchase of the present use of money with the promise to repay the amount in the future according to a pre-arranged schedule and at a specified rate of interest. In banking and finance, loan contracts formally spell out the terms and obligations between the lender and borrower. In all construction activities costs occur earlier than payments. Hence, contractors in least developed countries often obtain the capital resources to finance the costs of construction. Due to their low capacity, they are in difficulty to cover earlier costs. Hence, to cover the costs that are related to mobilization and commencement of a project, the project owners will facilitate advance payment for the contractors at the early period of the project Rajaraman and Vasishtha, (2010).

A project cannot proceed without adequate financing, and the contractor should incur costs for adequate financing for its projects. For this reason, attention to project finance is an important aspect of project management. Project financing mainly comprise the different types of loans based on their time to maturity. The different term loans with their time of maturity in the domestic commercial banks are; short term loan: Up to 1 Yr, medium term loan: 1 Yr to 5 Yrs and long term loans- more than 5 Yrs.

In essence, project finance problem is to obtain funds to bridge the time between making expenditures and obtaining revenues (payments). Based on the conceptual plan, the cost estimate and the construction plan, the cash flow of costs and receipts for a project can be estimated. Normally, this cash flow will involve expenditures in early periods. Covering this negative cash balance in the most beneficial or cost effective fashion is the project finance problem.

Normally banks will not give loans without securing the repayment of the loan. Assets pledged as security against loan loss are called collateral. An asset purchased by the loan or assets owned before the loan may serve as collateral. In other cases, the borrower puts other assets, including cash to be collected, additionally that can be considered as collateral. Credit backed by collateral is thus known as secured debt, while unsecured debt relies on the earning power of the borrower. Most Governments survey figures suggest that around 40 percent of all commercial and industrial loans are secured debt with collateral Ross (2011).

As put by Abebe (2009) the options for borrowing by contractors to bridge their expenditures and receipts during construction are relatively limited. For small or medium size projects, overdrafts from bank accounts are the most common form of construction financing. Usually a maximum

limit is imposed on an overdraft account by the bank on the basis of expected expenditures and receipts for the duration of construction. Contractors who are engaged in large projects often own substantial assets and can make use of other forms of financing which have lower interest charges than over drafting. This can help in reducing the working capital problem of contractors in least developed countries. In general, commercial banks in developing countries are reluctant to lend to small contractors for a set of various reasons; the contractors are often first-time borrowers without any track records at the bank, they are unable to full-fill the collateral requirements of the bank, they cannot present their last years' financial statements to the bank and they are unable to finance 20-50% of the investment from their own resources as required by the bank.

Banks often require collateral or third party guarantees as compensation for the perceived higher risk involved in lending to contractors. In some situations, project owner can facilitate contractor's access to bank finance by providing them with guarantees. Banks also can provide loans and guarantees for trustworthy contractors without securing the repayment of loans with collateral or third party guarantee only considering the contractor's track record at the bank Zemek (2009). For a contracting agency there are three different possible ways to stand guarantee for a contractor to get loan from banks; guaranteeing work, guaranteeing work payments and guaranteeing loans.

Guaranteeing Work

The simplest solution from the perspective of the project owner is to prepare a letter guaranteeing the contractor a certain amount of work. By showing this letter to the bank the contractor will access some amount of credit. In most instances a document guaranteeing work by itself will not be sufficient for contractors to access credit. A project owner can only guarantee work for a certain period, not for the duration of the whole program.

Guaranteeing Work Payments

In cases where banks consider letters of guarantee as described above as insufficient, the project owner could agree to make payments to the contractors through the bank, allowing the bank to withhold parts of the payments in case of bad loan repayment by the contractor. However, the bank is legally not allowed to withhold such payments and in all instances the consent of the contractor has to be sought. Any contract, signed by the three parties, would have to state clearly the conditions under which the bank can withhold payments Gould (2000).

The contract should have to state clearly which sums the bank would be allowed to withhold at what moments; the amount of repayment, penalty interest, outstanding principal and legal expenses etc. Care should be taken in using this method even in countries where the legal framework supports it. The advantage of the method is that the contractors are backed in their efforts to establish contacts with a formal financial institution at no additional costs and collateral requirement.

This method has been developed and started in Tanzania by Commercial Bank it is known as "Tri-Partite Agreement". This has been intended in order to build the capacity of local construction firms and to facilitate a good working capital for their projects. The bank developed this method if and only if project owners / Employers are government organization duly organized under the laws of Tanzania. In this agreement the local construction firm should authorize the employer to channel all the payments of works executed directly to a special proceeds account that has been opened in one of the bank's branches. The bank will service the loan repayment according to the terms of repayment of the loan contract out of the special proceeds account and the bank will transfer the remaining amount, if any, to the contractor's account up on receipt of his application Elisante (2011).

Guaranteeing Loans

A third possible way to facilitate contractor's access to bank finance is to guarantee the loans that the contractor taken from a bank; this is commonly known as third party guarantee. In practice this means that the project owner would set up a guarantee fund on the basis of which it can provide the contractors with letters of guarantee. In a letter of guarantee the project owner agrees to share the loan risk with the bank. In case the contractor fails to repay the loan, the project owner pays part of the outstanding debt instead.

Banks' Lending Procedure

The current procedure for lending in most domestic banks includes; a n inquiry stage, application stage, site visit, preparation of an appraisal notes, evaluation by the board / committee, issuance of letter of intent, preparation of a legal agreement for lending for suitable project and ending the approved amount. At each stage of the application for a loan, a company is required to provide any relevant information which is required by the banks.

Equipment Financing

Most contractors in developing countries are unable to use their own funds and savings to invest in equipment. In situations where the contractors have insufficient capital to purchase new equipment, they will look for second hand trucks and machines on the local as well as foreign markets. This is seen in local construction firms clearly nowadays.

Guiding Principles to Support Contractors Finance

Scarcity of construction equipment of contractors can pose serious threats to the quality of the works performed and to the time for completion of the construction project. The owner of a project either pre-finances equipment by giving advance payments or by giving guarantee for bank loans or sets up a leasing scheme in order to build the capacity of the contracting firm with regard to equipment capability for a better quality & on time completion of a project Waweru and Kalani (2009). The different possibilities of financing equipment for construction firms are; outright purchase, truck/ equipment loan, leasing schemes, hire purchase scheme, pre-payment (advance payment) of equipment by the project owner and supplier's credit/ credit Sales.

Outright Purchase

In outright purchase the company immediately owns the plant/ Equipment and has title to it. The plant is an asset, which will appear in the company books. The company has full control over the plant/ Equipment and can use it as and where it wishes, sell it etc. However, outright purchase requires a large initial capital outflow. This is not easy for construction firms in least developed countries.

Truck/ Equipment Loan

Truck/ equipment loan is a loan facility provided for construction firms in order to purchase the required equipment for their construction projects by securing the repayment of the loan by the equipment that is to be purchased. The contractor has full ownership over the equipment.

Mudharabah (profit sharing saving account)

This is a type of investment partnership where a customer deposits money for an unspecified length of time and the Bank shares both the profit and loss with her/him. The customer may withdraw his/her deposit at any time, but the Bank may impose some restrictions on the amount to be taken out as this arrangement is both a profit and loss sharing partnership.

Administration of the Schemes by A Financial Institution

In some cases, the project owner as well as the suppliers opts to subcontract a financial institution for the administration of the leasing, hire purchase or suppliers' credit scheme. The involvement

of a financial institution would ensure efficient financial management and administration of the credit scheme. The cost of hiring the services of a financial institution though can be high; however, it will give relief for the project owner or the suppliers in relation to the payment collection for the equipment financing schemes.

Bonds and Guarantees

A bond is a legally enforceable financial guarantee given by a third party (the guarantor) to a project owner (client) to guarantee the obligations of a contractor under a contract. The guarantor agrees to pay the client a sum of money if the contractor fails to perform his obligation under the contract. The purpose of requiring a bond is to help the client meet the extra expenses to remedy the default and /or complete the contract. Bonds are generally provided by the financial market, either by a bank or a surety company. The contractor and the guarantor will seek to establish the terms and conditions under which the bond can be called. Clients, for their part want to know that the guarantor issuing the bond is a sound, reliable and responsible corporate body and be satisfied that if there is need to call the bond for payment the guarantor will comply promptly Tundu (2012).

Mostly in Tanzania, bonds and guarantees are provided for domestic construction firms by both local and foreign commercial banks and insurance companies. Commissions for bonds and guarantees requested by the banks are relatively expensive than that of insurance companies. However, some project owners may oblige the contractors to provide bonds and / or guarantees only from banks. Generally, the cost of a bond is relatively small in comparison with the price of the contract. This will depend to some extent on the terms and conditions the client requires and the degree of risk the guarantor attaches to the ability of the contractor to give a counter indemnity and to reply any sum that is called Osoki (2011).

A guiding principle of procurement best practice is that normally a contract should not be placed with a contractor for guarantee/ bond if there are reasonable doubts about the contractor's ability to meet the terms and conditions of the contract satisfactorily. Such doubts may arise in relation to the adequacy of the contractor's management and technical resources to deliver on time and to the required quality standard, or where information available suggests the contractor may have inadequate financial resources with consequent risk.

Bonds are not always necessary and are not substitute for considered judgments about the risks of a particular contract and the capabilities and financial resources of the available contractors. A

decision to require a bond must be part of an overall approach to risk management and should take account of available measures to reduce the risk of default, including a proper prequalification of tenderers. Basically there are different types of bonds which are adopted in a construction activity. The main are bid bond / bid security, performance bond, advance payment guarantee / bank guarantee and retention money guarantee.

Bid Bond / Bid Security

Bid bond / Bid Security is a bond furnished by a bidder/ contractor, as part of its bid for the amount labeled in the bid document from a legally registered bank. In most tenders the bid security amount is about 1% of the contract amount. The maximum limit set in most local competitive bids (LCB) is Tanzania shillings 1,000,000.00/=. The terms and conditions of a bid bond determine the circumstances and mechanisms by which the bond can be called. The bank undertakes to pay the employer of a project up to the amount specified in the bid bond. The conditions of the bid bond obligation are; if the bidder withdraws its bid during the period of tender validity specified in the tender document, if the bidder refuses to accept the correction of errors in his tender. For example: Error in unit prices, arithmetic errors and if the bidder having been notified of the acceptance of his tender by the employer during the period of bid validity and,refuses to sign the contract agreement or rails to furnish the performance security.

Performance Bond

A performance bond is usually provided after contract award, for an agreed percentage of the total contract value (normally 10 percent). The guarantor/ bank will agree to guarantee the due performance of the contract according to the terms and conditions of the contract agreement. The guarantor agrees with the employer in such a way that, if the contractor in any respect fail to execute and complete the contract or commit any breach of his obligations there under, then the guarantor will indemnify and pay the employer the sum of amount of guarantee, such sum being payable in the types and proportions of currencies in which the contract price is payable. If the contract amount increases, or the duration of the contract extends, then the bond may need to be amended accordingly. A performance bond will not by itself ensure that contracts are carried out efficiently and to time, but it will be one of a number of pressures on the contractor to perform well Auronen (2009).

Advance Payment Bonds/ Bank Guarantees

This bond allows advance payments under an awarded contract to enable initial purchase of essential materials required to perform the work. This provides significant cash flow benefits to the contractor in order to start the new project according to the stipulated time.

Retention Bonds / Maintenance Bonds

These bonds provide the project owner with a guarantee to the value of the bond that the contractor will fulfill its defects or maintenance obligations as stated in the contract to release the retention money that should has been deducted from the contractor's interim.

2.1.2. Components of Project Cash Flow

The three main ingredients in determination of project cash flow are Emad(2012): expenses, income and time of payment. Expense (cash out) represents the aggregate payment the contractor makes over time. Income (cash in), a receipt of cash for rendering services. Timing of payments in cash flow analysis related to the work done by the contractor both for cash in and cash out.

Expenses (cash out)

Construction costs are classified into two Chitkara (1998), direct cost and Indirect cost. Direct costs are costs that can be assigned for a specific activity in a project. These costs go to permanent works. Indirect costs are costs that are attributable to a given project but cannot be identified with the performance of a specific activity or work package. Indirect costs also add in overhead costs of the enterprise.

Project income (cash-in)

Ashley and Teicholz (1977) defined the cash in as earnings minus held retention. The flow of money from the owner to the contractor is in the form of progress payments. Estimates of work completed are made by the contractors periodically (usually monthly) and are verified by the owner's representative. Depending on the type of contract (e.g. Lump sum, unit price, etc.), these estimates are based on evaluations of the percentage of total contract completion or actual field.

Time effect of money

The value of money is dependent on the time at which it is received. A sum of money on hand today is worth more than the same sum of money to be received in the future because the money on hand today can be invested to earn interest to gain more than the same money in the future Emad(2012). Thus, studying the present value of money (or the discounted value) that will be received in the future is very important. In construction projects one can figure out the three

components explained above at the beginning of the project having at hand the construction cost estimate, the work schedule and the contract agreement. The cost estimate helps to determine the cash out. The schedule helps to arrange timing of cash out. The payment terms help to determine the timing and amount of cash in. Thus three inputs are the basics for developing the first cash flow plan. Further considerations will be made for financial source. Therefore, the three inputs together with source of finance play a great role in affecting project cash flow during planning stage. In addition, there are design related factors and managerial factors affecting project cash flow at preconstruction or during construction stage. These factors together with those factors affecting project cash flow during implementation will be discussed in the next section.

2.1.3. Factors Affecting Cash Flow

A model for accurately predicting trends in a project's cash flow prior to the construction phase has been elusive. But advance knowledge of the factors affecting cash flow and an understanding of their impact is essential to the contractor Liu et al (2009). Construction sector is vulnerable to economic changes, especially in Ethiopia where the exchange rate fluctuate time to time it increase the construction projects financial risks. Borghezi and Gaudenzi (2013) consider the interest rate of credit; currency and liquidity are the factors which generate highest financial risks in construction projects. In Hlaing et al (2008) there are listed the most relevant risk factors in the construction industry and the top four risk factors are financial ones: the lack of financial resources of the contractor, the financial stability of the client, the costs over-runs and the financial stability. This research will discuss some factors affecting cash flow based on the inputs discussed above for the pre-construction stage. Also factors affecting project cash flow during execution of work will be covered.

2.1.3.1.Influencing Factors at Pre-Construction Stage

Before looking at the factors related to cost estimate a brief look to the types of cost estimate is essential. According to Hendrickson (1998) there are three types of cost estimates; design estimate, bid estimate and control estimate. Design estimate: the type of cost estimate during designing stage by designing firm, bid estimate: is the cost estimate submitted by the contractor to the owner during bidding. Control estimate: contractor's estimate for monitoring the project during construction. A control estimate should be updated periodically. Bid estimate may be used as control estimate depending on its accuracy. Since this research is dealing with cash flow management the concern will be about bid estimate and control estimate Hendrickson (1998). A

cost estimate usually involves preparation of cost break down. A typical cost breakdown is composed of three costs; manpower, machinery and material costs. These costs are basically derived from the scope of work and method of work to be used. Hence, a cost estimate heavily depends on this scope definition. In fact, lack of proper scope definition has been stated to be a major source of bad estimate Cowie(1987) as cited in Akinci and Fischer(1998). The accuracy of a cost estimate is highly dependent on the level of detailing the scope definition. A cost estimate based on a detailed design should be more accurate than one without any design information. The level of accuracy also depends on the estimator. Estimators have motivational and cognitive biases and these biases can lead to distorted and inaccurate cost estimates Akinci and Fischer (1998). Clerical error due to estimator is also another factor leading to inaccurate cost estimate. There may be many or only a few work methods available. For instance, should the estimator assume central mortar mixing or mix concrete manually using labor force? Will timber be used or metal scaffolding is used? Generally different ways of how to do the job may result different amount of money to be incurred. Performance of manpower and machinery indicating the output of these resources will be required for the estimation. According to Sinclair et.al (2002) the output chosen will be based 9 on past performance, since the estimator will assume that this performance will be repeated in the future. Accuracy of this standard is highly desired as decreases in actual output lead to the increase in cost. Contingency has been defined as the amount of money or time needed above the estimate to reduce the risk of overruns of project objectives to a level acceptable to the organization (PMI, 2004). Therefore, consideration of this cost in the estimate should not be overlooked

2.1.3.2.Influencing Factors Related to Contract Agreement

Factors affecting project cash flow related to Contract agreement can be contract type, terms of payment, change work orders. According to Akinci and Fischer (1998) contract types may be grouped into two major categories; cost-reimbursable contracts and fixed-price contracts. Cost reimbursable contracts allow price adjustments relative to project costs. Cost plus contracts are example of this type of contracts. On the other hand, fixed price contracts include all contract types that require the contractor to establish a stipulated sum for the completion of a defined scope of work. Examples of this type of contract are lump-sum and unit price contracts. Most of DCE contracts are cost plus type. In fixed-price contracts contractors bear all the financial burdens of cost overruns. Also, these types of contracts can create an adversarial relationship

between the owner and the contractor, which can lead to significant disputes Ibbs and Ashley (1987) cited in Akinci and Fischer(1998) and may have negative effect on project cash flow. Various clauses in general conditions of contract can have indication on project cash flow. To mention some, there are clauses dealing with the preparation of cash flow forecast, payment terms, retention, taxes, currencies, price adjustment etc. These terms need to be considered and negotiated, if possible, during pre-contract meeting.

2.1.3.3.Influencing Factors Related to Project Schedule

After an award of construction project, the contractor plans how and when to do specific tasks which combine to deliver the agreed construction project. Project schedule is developed having defined the work activities, their relation and associated duration. All scheduling procedures 10 rely upon estimates of the durations of the various project activities as well as the definitions of the predecessor relationships among activities. Therefore, any change in the precedence of activities affects the timing of the activity to be accomplished. This in turn affects the timing of expenses to be incurred and income to be received which directly affects project cash flow. The longer the duration of a project the greater the effect of economic factors affecting the cost of the project Akinci and Fischer(1998). Also, additional overhead cost will be incurred as time overrun take place. Petros (1996) investigated the effect of having different works plans on the cost flow curve of one project. Results showed the significant variability of the possible curves.

2.1.3.4.Influencing Factors Related to Design

As mentioned earlier, project scope describes the work to be performed; hence a cost estimate heavily depends on this scope definition and lack of proper scope definition has been stated to be a major source of bad estimate. In addition, it creates a potential for changes in scope Akinci and Fischer(1998). These effects of vague scope in turn affect the cash flow of a project. Change orders have a negative impact on cash flow due to slow approval processes and eventual payment Venkataraman and Pinto (2008).

2.1.3.5.Influencing Factors Related to Management

Poor management like poor resource management, time management...etc. can have a significant effect on project cash flow negatively. The literature shows that apart from poor management, lack of adequate financial control is the most common characteristic of declining firms Slatter (1984). The management at corporate level affects project cash flow significantly because the source of central managerial decisions emanates from corporate level. Management decisions on

investment have their effect on cash flow. Alternatives should be well investigated and compared before such decisions are made. As discussed above work methods and resources are important inputs of a cost estimate. Therefore, poor plan of such input will have a negative effect on project cash flow. Management and planning team should consider the effect of such inputs on the project cash flow at the planning stage.

2.1.3.6.Influencing Factors during Implementation

Price fluctuations are the result of highly complex effect of various elements such as the value of money, supply and demand, added value of products Akinci and Fischer(1998). Over/ under measurement of work during interim valuation affects project cash flow either positively or negatively. A strong working relationship and an open line of communication should also be developed with client as well as consultant. The process of discounted cash flow analysis is enormously dependent upon prevailing interest rate. Thus, higher interest rates could adversely affect cash flow. According to Van Horne (1971) cited in Geofrey(1996) inflation in forecasting cash flows must also be reflected in a discount rate. Therefore, interest rate and inflation have a direct impact on the DCF.

A contractor incurs the cost first, but needs time to assemble all invoice supporting documents leading to delayed payment. This situation is one of the key factors leading to cash flow variance mentioned by Mark (2007). Failure of subcontractor: uncertainties related to subcontractors' performance raise the risk of a cost increase during construction Akinci and Fischer (1998). If subcontractors fail to perform the work, then the main contractor will have to bear the cost and time of finding a new subcontractor which affects the project cash flow. When resources like labor, material and equipment are unavailable while construction is on progress it affects the project performance and schedule which in turn affects the project cash flow due to additional overhead costs and inflation. Poor project management like poor resource management can have a significant effect on project cash flow negatively. It has been widely accepted and reported that weather conditions affect the productivity in construction Nkado(1995) cited in Akinci and Fischer (1998). It was also reported it is the major cause of cost overrun by Hetland (1994) cited in Akinci and Fischer (1998). 12 If the company could not take the necessary actions contractually for improving cash flow, lending strategies should be developed for meeting the financial needs of the project. Due to the risky nature of the construction industry, high rates of business failure and bankruptcy occurred in the construction sector and many banks are unwilling

to lend money to the contractors unless they are reliable Atallah (2006). Besides, even if the company is found eligible by the financial supplier, the lenders will loan with high rate of interest at time of cash shortage since the late interference on to project may not reduce the financial risk Halphin and Woodhead1998, cited in Melik(2010) this cost of borrowing widely varies from source to source. In addition to the impact varying rates, factors like company size and maturity, market niche, credit history, potential for growth and local market conditions play a great role in getting a financial source to meet needs.

2.1.4. Project Cash Flow Management

The construction industry suffers the largest number of bankruptcies of any sector of the economy, with many companies failing because of the poor financial management, especially inadequate attention to the cash flow management Kaka (1996) Like other management tools, cash flow forecasting is a repeated process. At first, a forecast, plan or target is compiled and then when the project is in progress, the performance is measured and compared with the plan Navon (1995). If there is inconsistency between planed and actual performance, the plan must be adjusted to meet the original target or at least to attain it as closely as possible. With good knowledge of cash flow forecasting, the contractor could more efficiently and accurately manage cash flow during the construction process to prevent extra expenses and avoid project collapse Liu et al(2009).

Project Cash Flow Forecasting

Financial management has long been recognized as an important management tool. Throughout the construction process, contractors need to be comparing the actual income and expenses against the forecasted values. If there are discrepancies between these values, the contractor needs to adjust the schedule and update the project plan to match 13 the estimated situation as early on as possible. With good knowledge of cash flow forecasting, the contractor could more efficiently and accurately manage cash flow during the construction process to prevent extra expenses and avoid project collapse Yaqiong et al (2009). The S-curve stands for ‘standard’ curve, but it also takes the shape of the letter ‘S’ when shown on a graph. The S-curve figure represents the project budget baseline against which actual cumulative budget expenditures will be evaluated. It helps project managers understand the correlation between project duration and budget expenditures and provides a good sense of where the highest levels of budget spending are likely to occur Venkataraman and Pinto(2008).

Minimizing Negative Cash Flow

A cash flow deficit arises when payments are due, and the cash balance is too low to meet the obligations. As one of the purposes of cash flow projection is to give time to plan for deficit rather than reacting at the last minute, there must be time to explore the options of a company in overcoming this deficit. So far in literatures, there are several ways of managing a cash flow deficit. It is very important to a contractor to minimize negative cash flow because this may hinder performance of work due to lack of financial resources. Among the procedures one contractor may follow to minimize negative cash flow, before engaging in the work and face the difficulties, can be: Negotiation for favorable advanced or mobilization payment. - To negotiate with the client for getting fair and logical payment terms and retention Atallah (2006). Adjust the timing of delivery of large material orders to be with the submittal of the monthly invoice.

Contractors also have a way of minimizing the happenings of cash flow deficit during implementation, among them are, Achievement of maximum production in the field to increase the monthly payments. according to Atallah (2006), contractors can speed up collections by submitting the first invoice as soon as possible introducing the completed works to the client as soon as possible for making checks and strictly following up the deserved receivables. Delay in paying labor wages, equipment rentals, material suppliers 14 and subcontractors. But explaining the situation honestly and requesting a revised payment schedule is much better than simply ignoring bills when you are in a bind with vendors. Sub-contracting is often used as negative cash flow minimizing technique. If the company has its own workforce, they need the money available to pay the workforce weekly. But if the company makes use of sub-contractors, the money can be held for much longer, awaiting a monthly invoice to pay after receiving it. Besidesthis application of retention to sub-contractors is mentioned to be a way to enhance cash flow by Atallah(2006).

Project Cost Control

Project cost control is the process influencing the factors that create changes to the cost baseline to ensure that changes are beneficial. It is managing the actual changes when and as they occur. According to keith (2008) the three main types of contractors' project cost-control systems are as follows: Cost-value reconciliation (CVR) brings together the established totals for cost and value to illustrate the profitability of a company. Its intention is to ensure that the profits shown in the company accounts are accurate and realistically display the current financial position. Earned value analysis (EVA) is defined by Howes (2000) as 'an established method or the evaluation and

financial analysis of projects throughout their life cycle'. Earned value management (EVM) is a fully integrated project cost- and schedule-control system which allows through trend analysis, the formation of 'S'-curves and cost/schedule variances. EVM, regarding cost management, is concerned with the relationships between three formulas that reflect project performance. Cost Variance (CV) is a very important factor to measure project performance. CV indicates how much over or under budget the project is.

2.2. Empirical literature

The study of construction project cash flow became increasingly popular in the 1970s and 1980s Kenley and Wilson (1986). While the importance of financial or cash flow management is normally discussed with reference to the company level, most of the 15 models for cash flow forecasting are individually developed for specific project types Navon (1995). This section is devoted to review the empirical studies on cash Management and its effect. Siraw (2015) analyzed the effect of cash flow management on Addis Ababa City Administration Road Construction Projects completed from 2000- 2005EC. A total of 47 contractors and consultants were collected on the common factors to contribute for time overrun on asphalt road construction projects by using a purposive sampling technique and analyzed using both descriptive and inferential statistics. From the result, it was found that 80% of the projects suffered time overrun. The most important causes of time overrun next to slow cite clearance was found to contractors' financial problems. Cristine Mutti (2002) shows the major causes of construction firms' failure. Which are poor management and bad cash flow management. From the evidence of the impact of cash flow on failure," it is clear that the causes of failure, even when they are known, do not appear to be taken seriously" They must be if a company is to survive.

2.2.1. Related Studies in Ethiopia

The study of Melese mamo (2006) revealed that the Ethiopia's construction industry is full of financial scarcity. This has been indicated from the collected data of the distributed questionnaires and / or the interviews. Basically the research has been designed for the assessment of the role of the domestic banks in the capacity building and working capital financing, in equipment financing and in providing bonds and guarantees for the domestic construction firms.

Most of the domestic construction firms have high cash flow problems. Due to shortage of owned assets to use as collateral, the construction firms will not get construction loans easily. In this regard the study indicated that over 58% of the responding firms will finance their projects by

taking loan from individuals with high interest rate (8 – 10% per month). In addition to this, they will also use suppliers' credit, extend creditors payment period, use payments of other projects etc. From the questionnaires that have been distributed to construction firms, all of the firms established after the economic reform which means in the 5th period of the Ethiopia's construction industry development (1987 – 1991), "during Re- Emergence of Privatization and Emergence of Decentralization."

As it is known, the availability of construction projects is very crucial for the establishment and development of a construction firm. Since Ethiopia lacks infrastructures, there are a lot of projects under construction and there are also a lot under study. This will create a large job opportunity for the domestic construction firms.

The collected data showed that about 57% of the class I construction firms have projects at hand with a total cost more than One Billion Ethiopian Birr and annual turnover greater than One Hundred Million Ethiopian Birr. According to the data obtained from the distributed questionnaires, all of the responding construction firms disclosed that finance is very important and major resource in construction projects. Like the finance 67% of the respondents considered manpower capacity as a very important tool in their organization.

One thing that has been observed in this study is the safety margin set by the domestic banks for collaterals secured for Bank guarantees and construction loans. The banks will assume a safety margin up to 50% of the book value of an asset that is secured for loan repayment. This is very high and the domestic construction firms are unable to provide the required amount of fixed assets due to their low capacity. If the construction firm able to provide a building as collateral, then the safety margin will be lower than this.

2.2.2. Global Studies

According to Guillaumont (2010) who studied financing system to small and medium constructers in Singapore using a sample size of 230 construction companies revealed P-value of 0.03 at t-stat of 68% that inferred demand for security to the small and medium size constructors was more pronounced than say to a first class international constructor. Whether a company should be granted unsecured or partially secured loan (even the type of collateral to be accepted) would depend of the financial and reputation standing of the company. For instance, a first class international contractor would view reputation damage as a very serious matter. Here it would be relevant to mention that there were a number of cases where banks found themselves holding

forged/duplicate registration cards of trucks and earth moving machinery owned by local contractors. Typically, it would be common to find that the equipment involved has been offered as security to more than one bank. The underlying point here is that reputation damage was not held in high esteem by certain local constructors.

Petit (2011) analyzed efficiency of commercial banks when dealing with construction sector in Luanda found in 1998 commercial banks were 97.0 percent scale efficient and they operated under increasing returns to scale environment. That was a minimum overall average efficiency score recorded during the period and there were improvements to reach an exciting average score of 99.9 percent in 2011 showing that there was convergence to the full efficiency line over time. Under constant returns to scale, a restrictive version of DEA model, the overall average technical efficiency was 96.1 percent while that of variable returns to scale model was 97.3 percent, implying inefficiency divergences of 3.9 percent and 2.7 percent, respectively. These rates tell us the extent to which banks could reduce inputs and yet produce the same amount of outputs in both cases. It was further observable from the summary of input slacks that technical inefficiency arose more from inefficient use of labor, fixed assets and equipment rather than underutilization of deposit input in the intermediation process.

Barth, Caprio and Levine (2010) studied efficiency score among local small and large banks compared to international banks in processing loans to construction activities. The study revealed that small banks had higher technical efficiency scores than that of large domestic banks but lower than the scores of international banks. During the period, small banks had average technical efficiency rates of 96.0 percent and 96.6 percent in CRS and VRS models, respectively. Inefficiency divergences from the frontier were 4.0 percent and 3.4 percent for the two models. From the Malmquist indices, the group of construction project involved indicated a positive development in both technical and scale and efficiency, however, by a diminutive rate of 0.2 percent. Construction projects under study were operating on the rising part of the average cost curve, and as for all other groups, technical inefficiency emanated from underutilization of labor, fixed assets and equipment.

Fernandez, Jorge and Saurina (2007) conducted a study at 10 commercial banks in Dubai to analyzing effectiveness of loan extended to construction sector, their Return on Equity (ROE) and rate on Non-Performing Loans (NPL) components. Therefore, results of ROE and NPL/TL show that non-performing loan of the construction sector component was significantly negatively

related to profitability the bank gained. That was, 1 percent increase in non-performing loans decreases profitability (ROE) by 1.506 percent. The parameter value showed further that 1 percent increase in non-performing loans decreased profitability (ROA) by 0. 4168 percent. The results verified the hypothesis that better credit risk management resulted in better bank performance. It was aware that profitability was an endogenous variable meant that it influenced the magnitude of non-performing loans extended to construction projects, since better profitability afforded the projects to write off more bad loans. But the study was focused to analysis one side relations to NPLs on profitability from commercial bank loans exposed to the Dubai construction sector.

On the study by Nishimura, Kazuhito and Yukiko (2009) the collected data showed that about 57% of the class I construction firms have projects at hand with a total cost more than One Billion Ethiopian Birr and annual turnover greater than One Hundred Million Ethiopian Birr. According to the data obtained from the distributed questionnaires, all of the responding construction firms disclosed that finance was very important and major resource in construction projects. Like the finance 67% of the respondents considered manpower capacity as a very important tool in their organization. The value given for the different resources by the requested construction firms.

Again, Cornett and Cornell (2008) studied on financial resources and construction equipment in Mongolia where their findings revealed that all of the constructors have financial as well as equipment deficiency to run and complete their projects smoothly with the required time, cost and /or quality. About 50% of the responding construction firms disclosed that there was skilled manpower incapability in their organization and 67% of them have managerial incapability to manage their projects and organizations properly. Similarly, about 42% of them lacked work experience in constructions of large infrastructure development projects.

The study by Uyemura (2008) conducted in Ethiopia found that all the construction firms that have been involved in the study had identical argument on the obstacles for the development and capacity building of domestic construction firms and they indicated that obstacles had high to extreme significance on the industry's development. It was very clear that the private construction firms in Ethiopia were very young. For the development and capacity building of the firms, it was observed again that construction firms should have strong financial partner. According to this study, about 83% of the selected construction firms disclosed that they preferred the private banks for the different facilities and bank services. The main reason that they pointed out for their

preference was fast and efficient services relative to the government banks. Furthermore, the study described that financial institutions contributed a vital role for a construction industry by providing different services and facilities. According to the study survey, all the banks provided the following services and facilities for the domestic construction firms; construction loans, bonds and guarantees, overdraft facilities and truck/ equipment loans. Therefore, the research survey clearly indicated that all of the domestic construction firms were getting short term loans from the local banks. 58% of them were taking medium and 17% long term loans. For the services and facilities that they had provided, banks took a certain percentage of commission from their customers. The banks' benefits (commissions) differ from one bank to another.

On the other hand, the study by Minrednard (2010) done in Legos found that banks would not give loans without securing the repayment of the loan. The study further indicated that 65 percent of respondents confirmed that all of the banks requested the construction firms to provide collateral as compensation for the perceived risks involved in lending money to the firms. All of the local banks would request the domestic construction firms to provide owned assets and an asset that is going to be purchased by the loan (in truck/ equipment loan) as collateral. Also, in some situations project owners can facilitate contractor's access to bank finance by providing them with guarantees. However, only 3 of the domestic banks indicated that they were allowed third party guarantee to secure loans and only 1 of the banks provided loan for a construction firm if a client of a project guarantees work payments to pass through such a bank.

In the same study, nevertheless any of the domestic construction firms didn't get a client who guarantee work as well as work payments to get loan from the banks. The project owners also responded that they could not guarantee work and / or work payments for their projects' contracting firms to get loan from banks. The other possibility that could be used by the banks to provide loans and guarantees for construction firms was by considering the firm's healthy relation with the banks. Three of the banks indicated that there was a possibility in their bank to provide loans and guarantees for domestic construction firms without securing the repayment by collateral or by any other guarantee considering only the firms' track record in the bank (if they are proved to be credit worthy in the bank), their experience in the business and their financial strength. It was ideal to get such kind of domestic construction firm due to their low capacity. Onother thing observed in this study was the safety margin set by the domestic banks for collaterals secured for Bank guarantees and construction loans. The banks assumed a safety margin up to 50% of the

book value of an asset that was secured for loan repayment. This was very high and the domestic construction firms were unable to provide the required amount of fixed assets due to their low capacity. If the construction firm able to provide a building as collateral, then the safety margin would be lower than the one found.

2.3. Research Gap

In general, from the above theoretical and empirical reviews studies specific research on this topic is very limited, both at home and abroad cases there is no enough studies made. Shortage of research studies on this topic create un aware of construction financial problem and let them to use other opportunities to stay on the truck which is in and out, mostly sub-contractors and employees of contractors face the challenge of the contractors or the contractor break its agreement. Overall, there is little research on this topic, but the problem is very broad.

Meles Mamo (2006) tried to present the contribution of the Financial Institutions in the capacity building as well as project financing of the domestic construction firms which are involving in the infrastructure development activities of the country.

Tanzanian Rahim study focused on role of commercial banks in development financing in Tanzania, the case of construction sector Rahim Saadan (2013) The study recommended 77 percent of commercial banks found not offering credit for finance leasing to venture it given the newly regulation of 2011 for the same permits. However, analysis of cost of fund exposed to the construction sector and critical risk assessment on financing the construction sector were suggested as areas for future studies. Different abroad studies are presented globally and will need further studies especially in Ethiopian context the gap is very wide and have high construction finance problem.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents the research methodology which was employed by the researcher. It provides the research design, sample selection and size, and data collection and administration procedures, data measurement and analysis techniques.

3.2. Research design

Research design would be referred as a set of advance decisions that make up the master plan specifying the methods and procedures for collecting and analyzing the needed information. In this regard, there are three major types of research design which are case study, survey and laboratory experiment. Therefore, this study deployed a survey research design given large scope of the study to various Institutions such as CBE, COOP, BOA, Awash, Zemen, Dashen, Nib and Zemzem bank and other 18 construction projects. Likewise, the survey design employed due to its easiness to administer compared to other designs like case study and experiments. It provided an intensive and integrated investigation of a definitive search for comprehensive information. The study however was empirical in nature, based on mainly primary data collected by the researcher through interview and structured questionnaires.

3.3. Research Approach

The research started with problem identification which has been done through unstructured literature review. Once the research area is identified conceptual and contextual literature review have been done to have an in depth understanding on the research topic and its objectives focusing on roles of banks in construction sector. The review includes books, journal and articles, internet sources and archival document

After an in-depth review of literature, an interview questions were prepared and interviewed to contractors and Banks to get information and know the services delivered to the user in the country. Upon obtaining the desired data, checking and sorting of data has been done. This was followed by analysis to obtain the result and thoroughly discussions in order to draw a conclusion and to forward recommendations based on the finding of the study.

3.4. Target Population

The population of the study included employees of Ethiopian Commercial Banks and persons working with construction sector.

3.5. Sample Size

The required sample size for the research involved in the survey was determined statistically using the following expression (Kish, 1995 cited in Arian and Pheng 2005b).

$n0 = (p*q)/ V2$ …….…….. [3.1]

$n = n0 / [1+ (n0 / N)]$ ……..……..... [3.2]

Where:

n0: First estimate of sample size

p: The proportion of the characteristic being measured in the target population

q: Complement of p or 1-p

V: The maximum standard error allowed

N: The population size

n: The sample size

To maximize n, p was set at 0.5. The target projects, N were 26.

To account for possible error, the maximum standard error V was set at 15% or 0.15. Substituting in Equations 1 and 2 above,

n0= (0.5*(1-0.5)/0.152=11.11

n=11.11/ (1+ (11.11/26) =7.78

The minimum required samples were calculated to be 7.78. This means that the minimum sample size of 8 is statically acceptable for analysis of sample in Ethiopian Bank sector.

3.6. Types and Source of Data

3.6.1. Types of Data

Based on the objectives of the study, the study used both primary and secondary data. Primary data come from the original sources and were collected specially to answer the research questions. Secondary type of data involves sourcing for already processed information.

3.6.2. Sources of Data

The study incorporated both primary and secondary data sources for data collection purpose. The study mainly used primary data source. Bankers and contractors were the main sources for the primary data. Besides, secondary data were collected through review of journals and the Internet.

3.7. Data Collection Instruments

The data collection method followed in this paper is inductive in nature. It explores relevant factors, which are factors for role of bank in Ethiopian construction sector, by taking sample and conducting a case study, questionnaires and interview. In order to identify role of banks in construction sector. The purpose of the desk study was to obtain actual data from the source documents which included the contract documents, banks manual and services, financial document and progress as well as completion report to have contextual base on role of bank sector. Besides this a literature review to develop conceptual basis for the study was also conducted side by side. Through the above literature review, potential knowhow provided the basis to prepare the interview. Interviews are conducted with Bankers and contractors.

Interview Questions

The study utilized both structured and un-structured interview questions. Structured questions aimed at bounding the respondent to give out answers or information intended by the researcher whereas un-structured interview questions were two ways traffic giving both interviewer and interviewee a chance to giving more opinions beyond the question boundaries.

Questionnaires

Questionnaires consisting of 36 questions of Structured and unstructured questionnaires were administered at 8 selected commercial banks and 17 construction projects in order to get accurate information.

3.8. Data of Analysis

Data were collected and analyzed in a way that enabled to answer the research questions to meet the objective of the study. Data analysis was done both qualitatively and quantitatively. Selected banks will be carried out through document study and interviews, the mean score method of analysis was implemented to rank the role of banks in construction sector based for on frequencies of occurrence and analyze contractors cash problem and banks service related to contractors offer. The analysis was carried out based on the responses of the participants, giving special attention to the management of contractor's cash problem loan, and Conclusion is produced from the analysis made in the research and recommendations are given for mitigating and/or administrating loans. In addition, some areas of further research are suggested.

CHAPTER FOUR: DATA PREPARATION AND ANALYSIS

4.1. Introduction

In this chapter the researcher seeks to present and analyze research findings. The underlying findings include the demographic characteristics of respondents, identification of Commercial Banks' financing modalities on construction sector, risk analysis pertaining to construction sector financing, correlation between growth of the commercial banking industry and construction sector, challenges pertaining to construction sector financing and measures for overcoming such challenges. Commercial banks and construction projects were gathered through questionnaires.

4.2. Response Rate

Total number of 26 questionnaires was distributed to sample respondents working as bank staff members (8) and Grade B4 contractors (18) in Addis Ababa. However, out of the distributed questionnaire 8 were dully filled by bank respondents and returned in good time giving a response rate of 100%, while 17 questionnaires were filled returned by contractors which makes the response rate 94.44%. Bailey (2002) stipulates that a reaction rate of half is sufficient, while a reaction rate more noteworthy than 70% is great. This is also inconsistent with Mugenda & Mugenda (2003) who suggested that a half reaction rate is sufficient, 60% great and 70% considered exceptionally well. The results are shown in Table 4.1

Table 4.1: Response Rate

No	Party	Distributed questionnaires	Collected questionnaires	Percentages (%)
1	Bank	8	8	100
2	Contractor	18	17	94.44

Source: Survey data (2022)

4.3. Demographics Characteristics of Respondents

According to UN (2009) a thorough and professional research must encompass some variables of world cross cutting issues. Therefore, in this study demographic characteristic of respondents is composed of gender and age of respondents, working experience and level of education of the respective respondents. However, such demographic characteristic of respondents create inference on data validity and reliability given the fact that significant information for the study would have

high degree of reliance if at all given by matured respondent with a sound exposure of the banking and construction operations.

Table 4.2: Demographic Characteristics

Variables	Items	Respondents		Percentage	
		Bankers	**Contractors**	**Bankers**	**Contractors**
Gender	Male	6	14	75%	82.35%
	Female	2	3	25%	17.65%
	Total	**8**	**17**	**100%**	**100%**
Age	18-27	2	-	25%	0%
	28-37	4	5	50%	29.4%
	38-47	2	12	25%	70.6%
	Total	**8**	**17**	**100%**	**100%**
Education	Diploma	-	4	0%	23.53%
	Undergraduate	5	7	62.5%	41.18%
	Postgraduate	3	6	37.5	35.29%
	PhD	-	-	0%	0%
	Total	**8**	**17**	**100%**	**100%**
Experience	< 1 year	-	-	0%	0%
	2-5 years	3	2	37.5%	11.7%
	6-10 years	3	8	37.5%	47.1%
	< 10 years	2	7	25%	41.2%
	Total	**8**	**17**	**100%**	**100%**

Source: Own Survey (2022)

The participants were requested to specify their age in the questionnaire. As can be seen from the table above, bank staff members were young with almost 75% of them being under the age of 37, while 70.6% of contractors are above 37. Majority of the bank (75%) and contractor (82.35%) respondents from the data collected were male with 25%and17.65% being female respectively. This shows that there is not a fair representation of respondents by sex.

It is evident from the table above that majority of bank participants held undergraduate degrees 62.5% and 37.5% held post-graduate degrees while 23.53%, 41.18% and 35.29% of contractor respondents are diploma, undergraduate and postgraduate degree holders respectively. The level of qualification was significant in this study because it aids to determine if the respondents had the necessary knowledge to enable them understand the notion of the research study. It is clear from the table above that most respondents in this study held undergraduate education hence able to comprehend the concept of cash flow management. Therefore, it is possible to conclude that the information obtained from them can be considered as a reliable and reasonable due to their academic background.

Concerning work experience, the study wanted to determine the period the participants had operated at the bank and as a contractor. The study results revealed that majority of the bank respondents (75%) had served in their organization above 5 years, while cumulatively 88% of contractor respondents had been in the construction industry for above 6 years and are assumed to have gained adequate work experience and will be invaluable to the attainment of the research objectives.

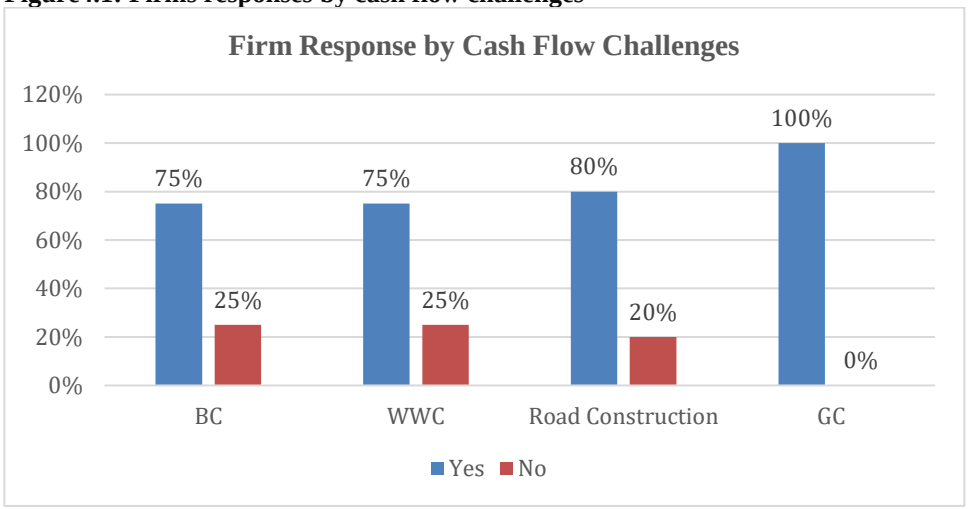
4.4. Results and Discussion

The aim of this paper is to study the role of banks in alleviating contractors' cash flow problem for construction projects.

4.4.1. Cash flow challenges

The results showed that 82.35 percent of the firms studied were experiencing cash flow challenges in their ongoing projects. The proportion of firms that had experienced cash flow challenges was greater in GC (100%), then Road Construction (80%), while both BC and BC had 75%.Thisindicatesthatchallengesofcashflowaremorecommoninallconstructionfirms.Cash Flow Projections for construction projects are a critical determinant for project completion, as detailed in this study's literature analysis in chapter two. According to the findings of the study, many contractors regard cash flow forecasting as a critical aspect in completing projects successfully, and we gather from our interviews with them that cash flow insufficiency is a significant challenge for their performance. Banks, on the other hand, claim that they are lending enough money to construction firms.

Figure4.1: Firms responses by cash flow challenges

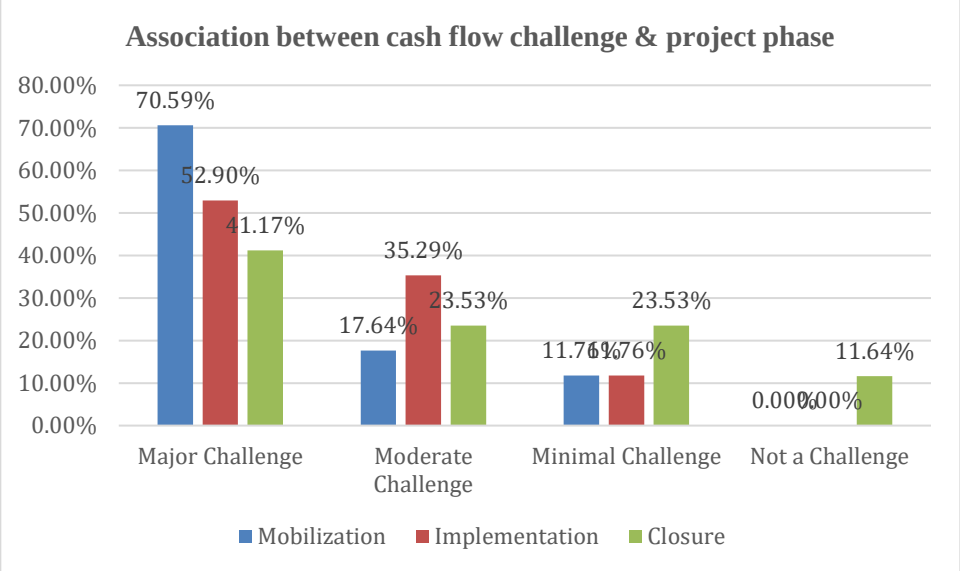


Source: Survey Result (2022)

4.4.1.1.Association between cash flow challenges and project phase

The results showed that cash flow was a greater challenge at mobilization stage (70.59%) for construction firms closely followed by at implementation (52.9%) and lastly closure (41.17%).

Figure4.2: Association between cash flow challenge & project phase

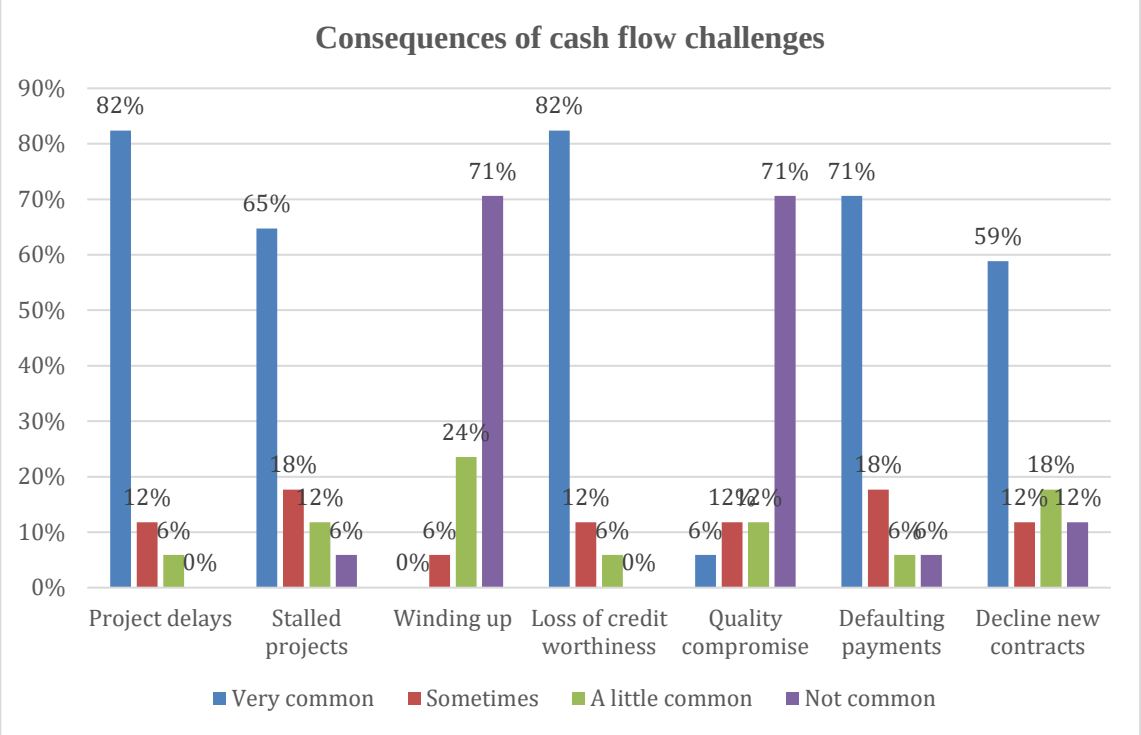


Source: Survey Result (2022)

4.4.1.2.Consequences of cash flow challenges

The results showed that project delays (very common -82%), loss of credit worthiness (82%), defaulting payments (very common - 71%) and declining new contracts (very common - 59%) were the leading consequences of cash flow challenges. The consequence of cash flow challenges on stalled projects was also significant with common to very common responses at 65%. Majority of respondents indicated that cash flow challenges had little or no impact on winding up and compromise on quality of works.

Figure4.3: Consequences of cash flow challenges

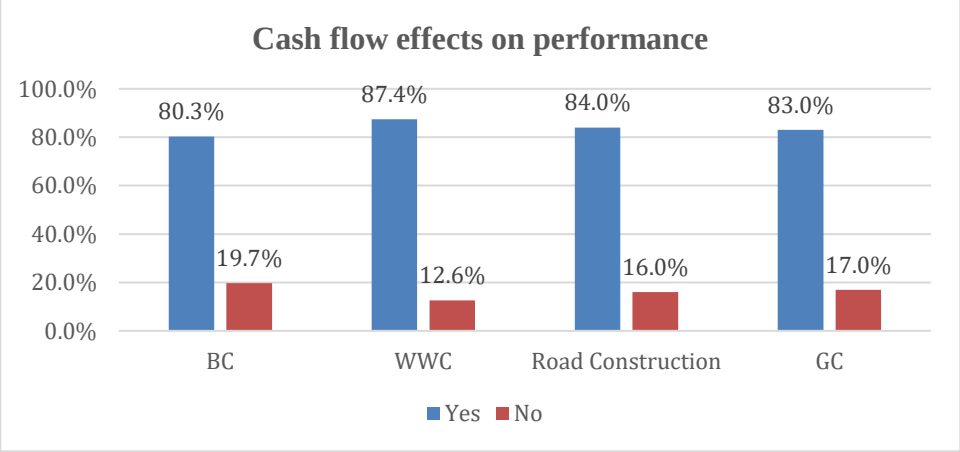


Source: Survey Result (2022)

4.4.2. Project performance

The results showed that cash flow affects project performance with BC (Yes – 80.3%), WWC (Yes–87.4%), Road Construction (Yes – 84%) and GC (Yes–80.3%).

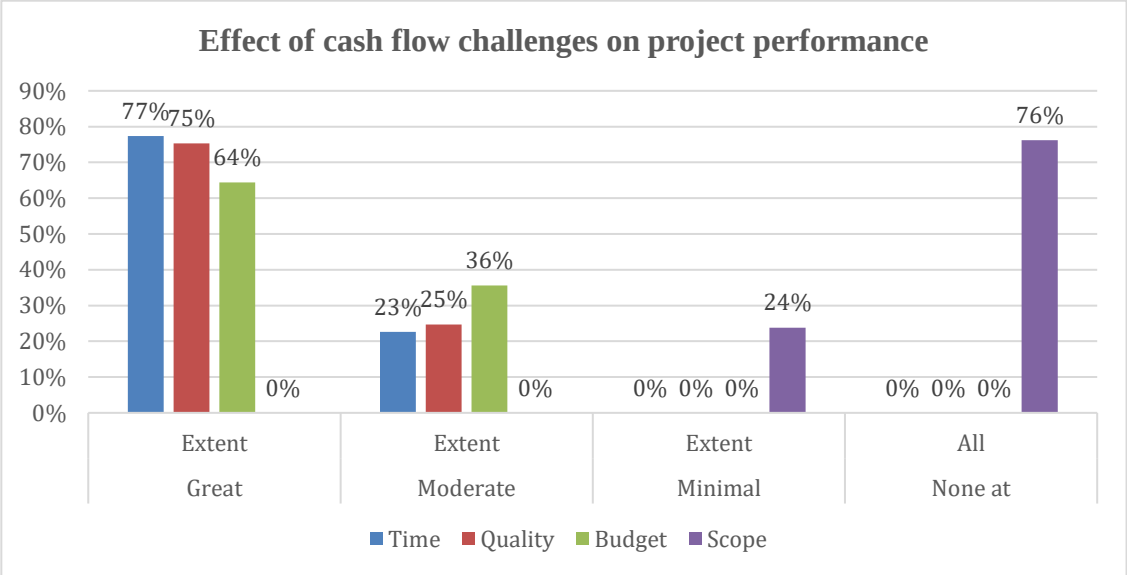
Figure 4.4: Cash flow effects on project performance



Source: Survey Result (2022)

The results showed cash flow challenges affects project performance in relation to time(great extent – 77 percent), quality (great extent – 75 percent) and budget (great extent – 64percent). The aspect of time and quality in project performance are significantly affected due to the fact that without sustained cash flow works ceases or contractors' compromises on quality.

Figure 4.5: Effect of cash flow challenges on project performance



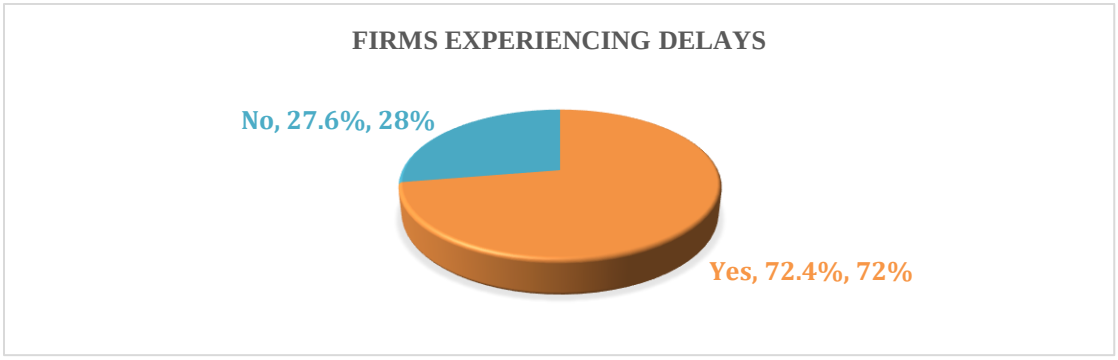
Source: Survey Result (2022)

4.4.3. Project delays

4.4.3.1. Firms experiencing payment delays

The results showed that 72.4 percent of firms were experiencing delayed payments in their ongoing or completed projects.

Figure 4.6: Firms experiencing payment delays

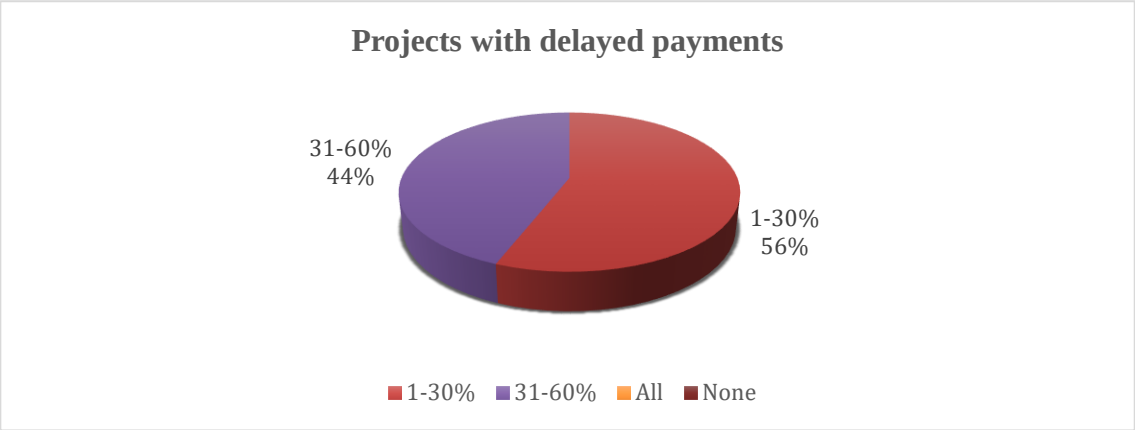


Source: Survey Result (2022)

4.4.3.2. Percentage of projects with payment delays

The results showed that all firms studied were experiencing delays in payments in up to60 percent of their ongoing projects. This means only 40 percent of their ongoing projects did not have delayed payments during the period when this study was undertaken.

Figure 4.7: Projects with delayed payments

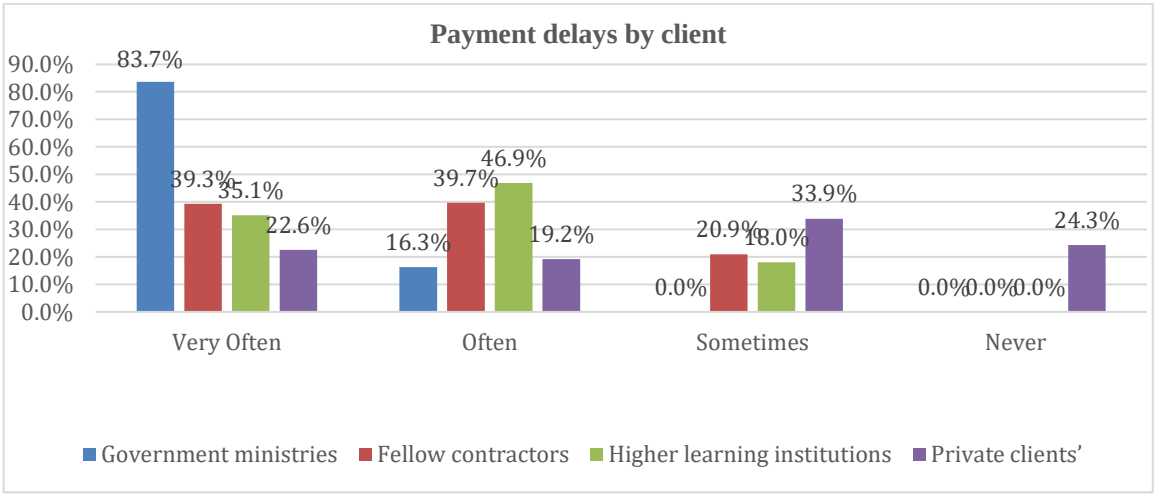


Source: Survey Result (2022)

4.4.3.3. Payment delays by clientele

Theresultsshowedpaymentdelaysweremorecommoningovernmentrelatedentities i.e. ministries and institutions of higher learning closely followed by fellow construction contractors. There were respondents who indicated they had not experienced delayed payments with some private clients.

Figure 4.8: Payment delays by client

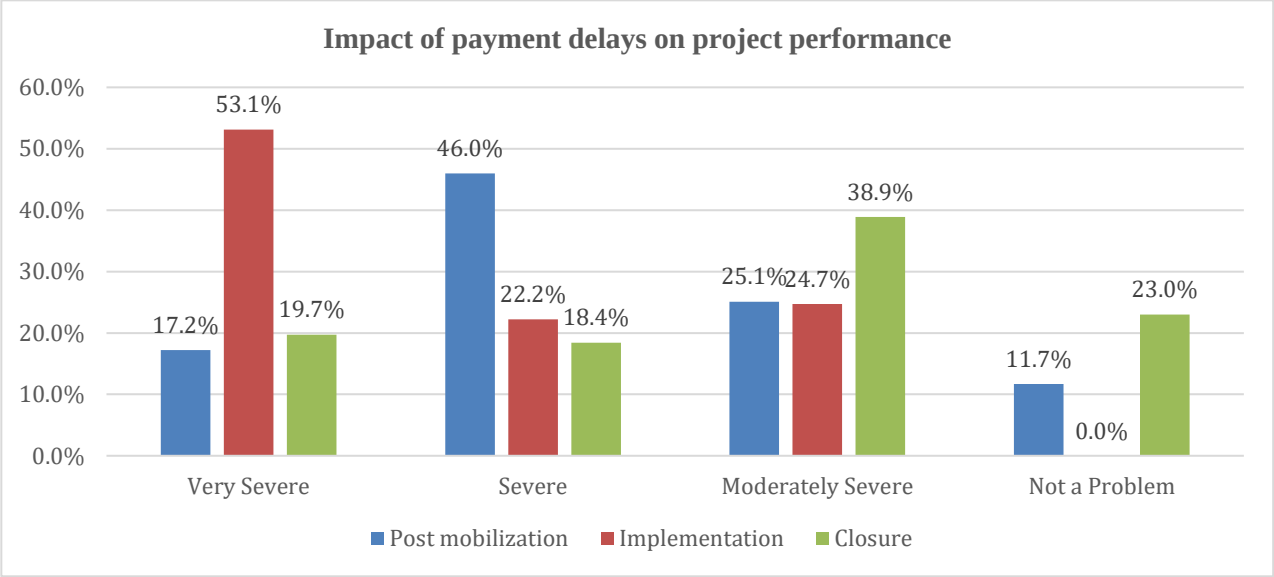


Source: Survey Result (2022)

4.4.3.4. Impact of payment delays on project performance

The results showed delays in payments were more significant in the implementation phase followed by post mobilization and lastly project closure.

Figure 4.9: Impact of payment delays on project performance

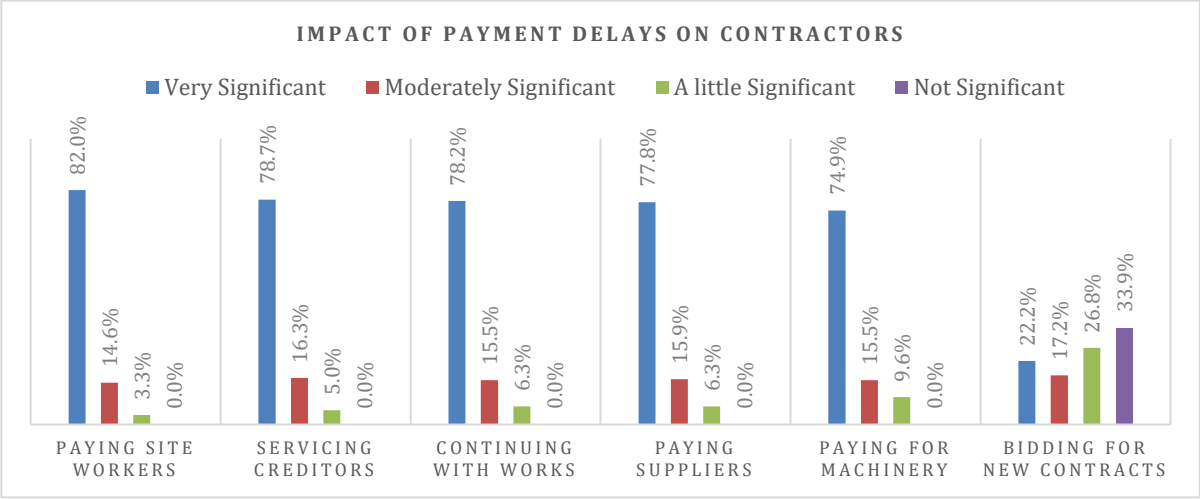


Source: Survey Result (2022)

4.4.3.5. Impact of payment delays on a contractor

The results showed delay in payments had a very significant impact on operations related to a project i.e. paying site workers, creditors, and suppliers and continuing with works. Bidding for new contracts was found to be independent from challenges faced with delayed payments.

Figure 4.10: Impact of payment delays on contractors



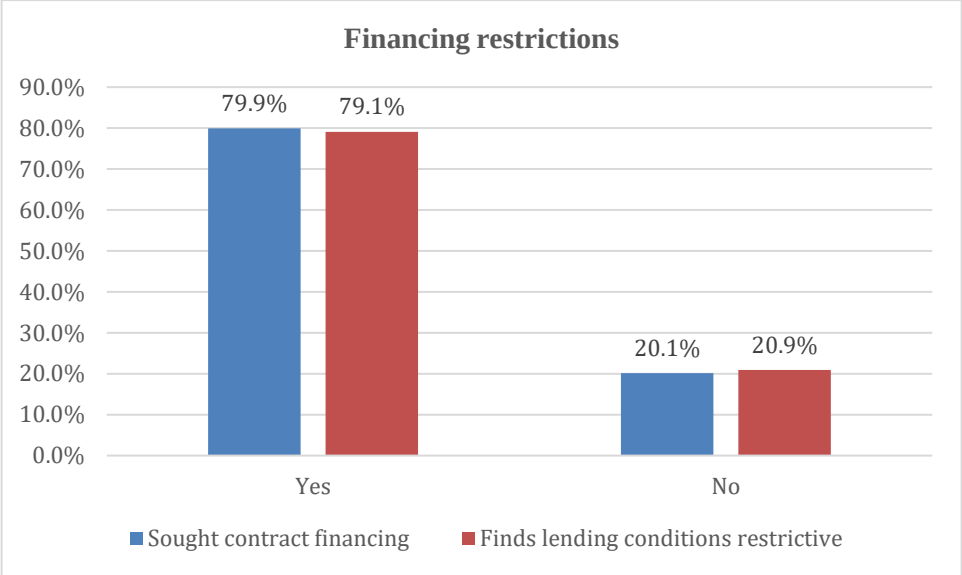
Source: Survey Result (2022)

4.4.4. Project financing

4.4.4.1. Financing restrictions

Majority (79.9 percent) of the firms studied indicated they had sought project financing from financial institutions while79.1percent of these indicated they found the lending conditions restrictive.

Figure 4.11: Financing restrictions

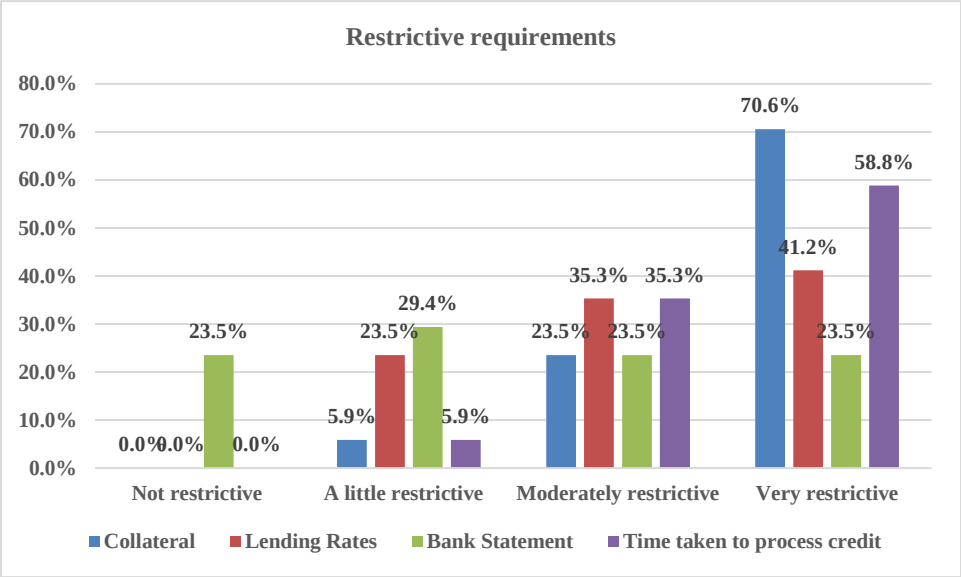


Source: Survey Result (2022)

4.4.4.2. Restrictive requirements

The results showed request for collateral (70.6%), time taken to process credit (58.8%) lending rates (41.2%) and bank statements (23.5%) as the most restrictive basis for accessing project financing. Contractors' obligations to obtain financers' aid, according to the results of the interview, include collateral, company reliability, reputation, and third-party guarantee. In addition to the value of the collateral and the company's creditworthiness, a third-party guarantee is often required, and the contractor's reputation is required in addition to the collateral. For the perceived danger of a loan, local banks require collateral. Contractors feel that banks want collateral as a form of compensation for the risk they perceive.

Figure 4.12: Restrictive requirements

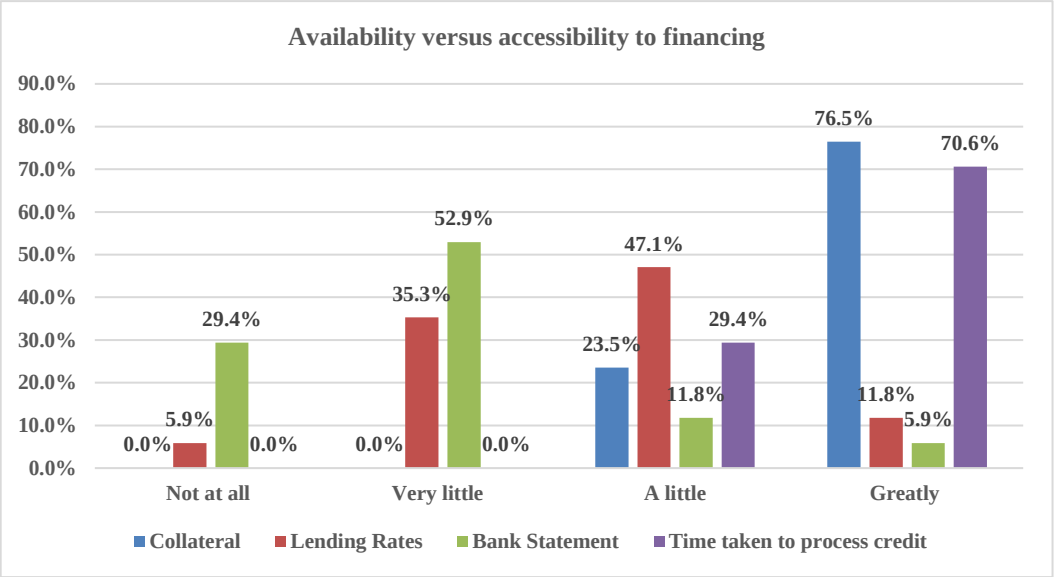


Source: Survey Result (2022)

4.4.4.3. Availability versus accessibility to financing

The results showed that requirements for collateral (76.5%) and time taken to process credit(70.6%)have contributed significantly to financing being viewed as available but inaccessible. In determining whether or not banks are adequately serving the construction sector, contractors should consider the following factors. Contractors believe the banks aren't doing enough to help them. Bank arrangements in many underdeveloped nations, such as Ethiopia, are limited. Some financial arrangements are unsuitable for the building industry. New banking arrangements are expected to be introduced to accommodate the industry. The majority of contractors feel that there should be alternatives to the current cash flow arrangements employed by contractors to solve construction project cash flow challenges. As previously said, a positive working relationship between all parties is essential for project completion on time and within budget.

Figure 4.13: Availability versus accessibility to financing

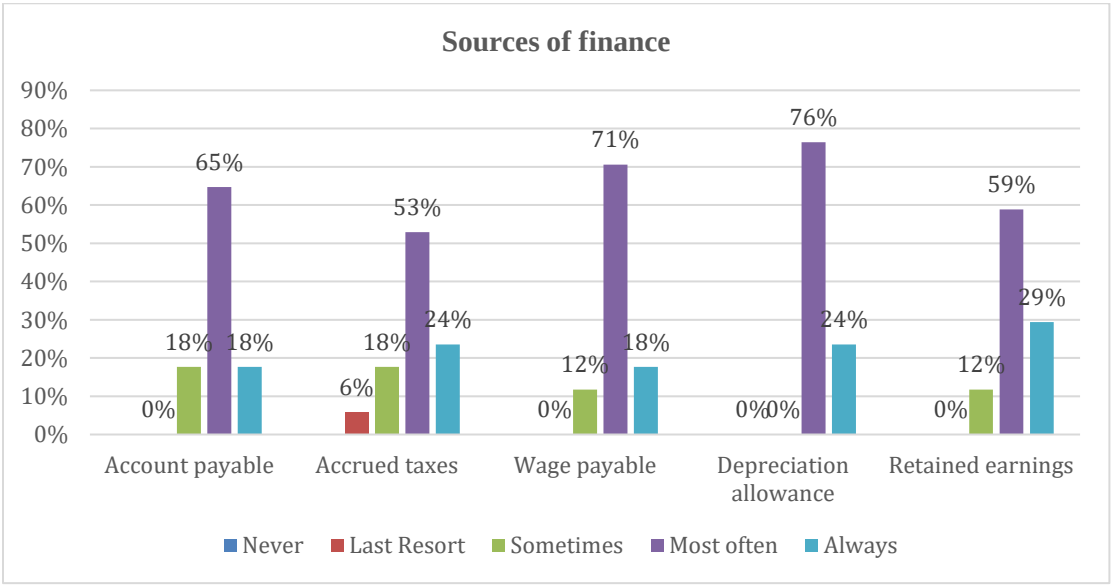


Source: Survey Result (2022)

4.4.4.4. Alternative Source of Finance

Finance for a project might come from both internal and external sources. Until now, we have attempted to obtain information about loan arrangements and associated matters from banks. Internal sources are another possibility for contractors to fund cash flow shortages in construction projects. Accounts receivable, accrued tax, wages payable, depreciation allowance, and retained earnings are all part of this internal source.

Figure 4.14: Alternative sources of finance



Source: Survey Result (2022)

The results showed that most contractors mostly source for financing from depreciation allowance (76%), wage payable (71%), account payable/ supplier (65%), retained earnings (59%) and accrued taxes (53%) when they fail to secure it from financial institutions.

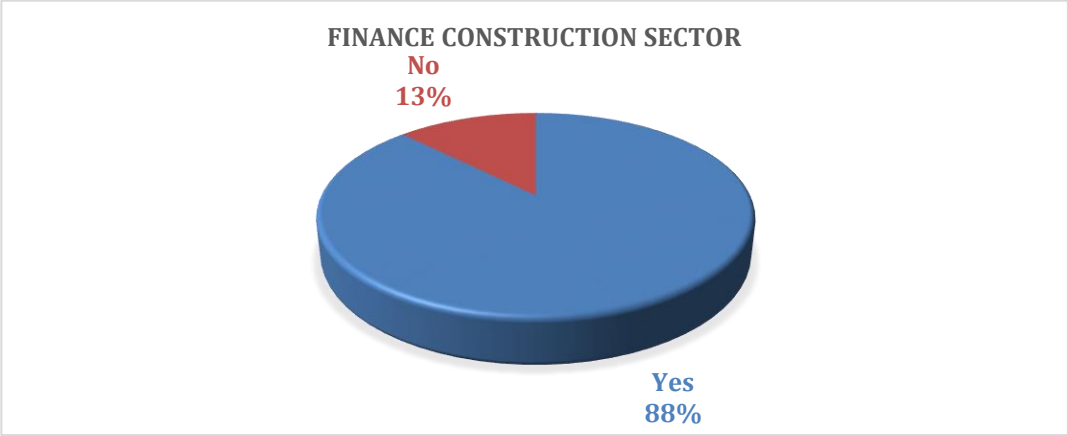
4.4.5. Role of Commercial Banks

The help of financial institutions is critical for the effective completion of building projects, particularly when there is a cash flow crisis. Because bank loans are the primary source of external funds, good use of this aid enhances the relationship between them. It may also encourage banks to work harder in order to better serve their customers. Another influence is the employer's involvement in construction projects. Getting a loan from a bank if the employer guarantees them and the bank is ready to lend them money using the guaranty as collateral is one way to solve a project's cash flow problem. The outcome of the interview reveals that banks are willing to provide money if the client agrees to labor.Contractors receive various bank arrangements, and for a variety of reasons, one may fail to meet his or her obligations. According to the data gathered, half of the banks have dealt with contractors who have failed to meet their obligations, while the other half have never dealt with one. When it comes to determining whether banks are adequately supporting the construction business, 62.5 percent do so, while 37.5 percent do not.

4.4.5.1. Financing Options to the Construction Sector

The goal of the study is to find out whether commercial banks finance the construction industry and, if so, what priority they give it. Figure 4.15 shows that 87 percent (7) of respondents responded yes, commercial banks finance the construction sector, while 13% (1) stated no, commercial banks do not finance the construction sector and that the same used other financing methods.

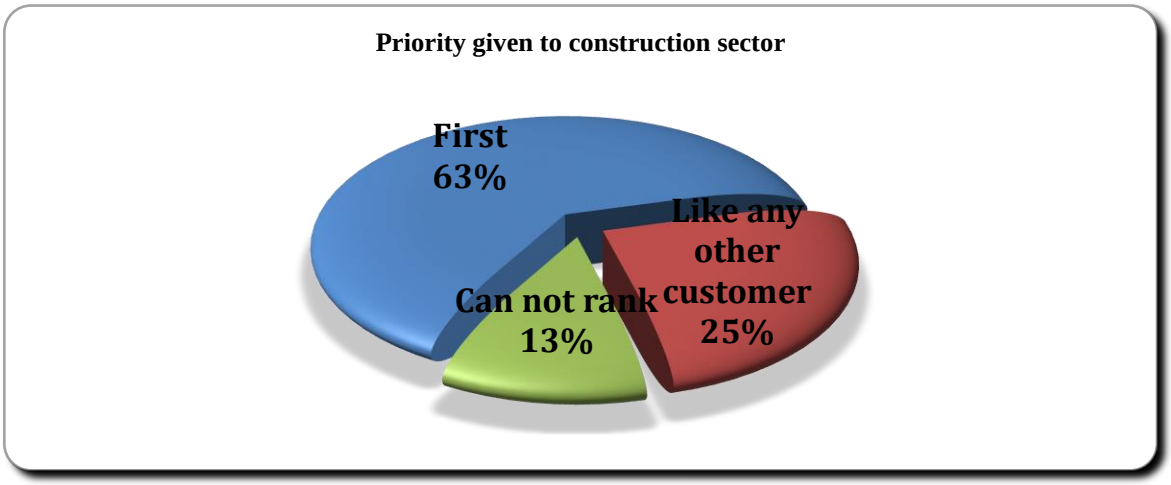
Figure 4.15: Financing the construction sector



Source: Survey Result (2022)

Similarly, 62 percent of respondents stated that commercial banks prioritize the construction industry, whereas 25% stated that commercial banks treat construction industry clients similarly to other bank customers, and 13% could not rank. In this regard, the survey was sure that the construction sector is financed by commercial banks, with 87 percent of respondents agreeing, and the construction sector is treated first in terms of priority.

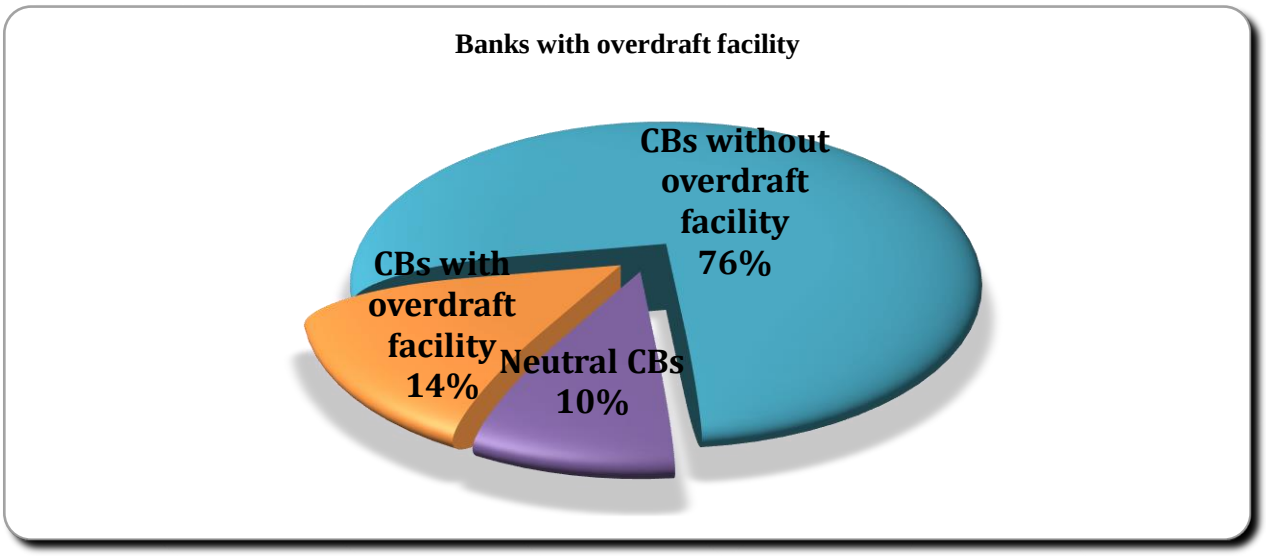
Figure 4.16: Priority to the construction sector



Source: Survey Result (2022)

Subsequently, the study aimed at identifying commercial banks' financing modalities to the construction sector whereas results on figure 4.16 revealed 14 percent of respondents identified over draft facility as one of the Commercial Banks' financing modality to the construction sector, while 76% of the respondents identified overdraft as not one of the modality. In respondents' views the study revealed that overdraft facility was a formal arrangement with commercial banks allowed respective contractor's account to draw funds in excess of the amount on deposit. Likewise, overdraft facility financing offered by commercial banks to the construction sector as a way of making their working capital more flexible. Again, overdraft facility agreement enhanced construction sector when need a bit more money than is available on deposit to deal with various expenses like payrolls and on periodical basis given seasonality nature of construction sector. Despite of overdraft finance attracting higher interest on fund utilized than term loan, the study revealed further that most commercial banks in Ethiopia had been discouraging this modality given the other side of it reduces income on the bank side.

Figure 4.17:Banks with overdraft facility



Source: Survey Result (2022)

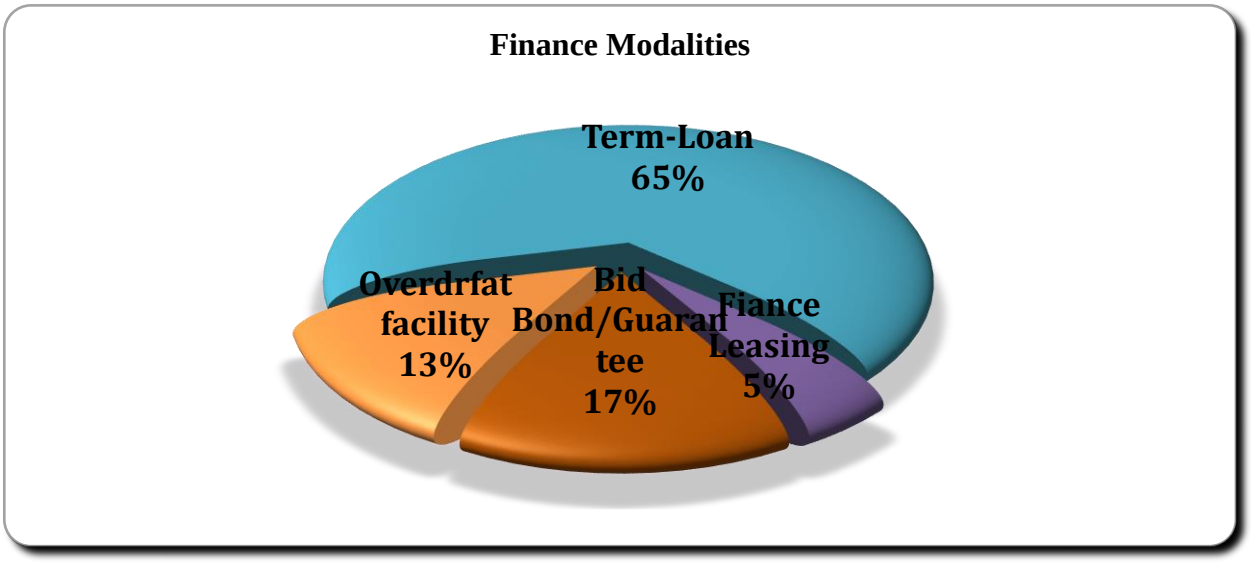
Figure 4.17 shows that 14 percent of Ethiopia's commercial banks had an effective overdraft facility, whereas 76 percent did not, and 10% could not be characterized as having or not having one.

Furthermore, as shown in Figure 4.17, 65 percent of respondents selected term loan as another method through which commercial banks finance the building industry. According to the responses, a term loan is a credit offered to a builder by a commercial bank on the condition that it be returned in installments or all at once on a specified date at an agreed rate of interest. In this case, tem loans would be utilized to fund a long-term capital investment or item. According to the study, all commercial banks charged interest on construction term loans in the form of a fixed or floating interest rate. A fixed interest rate is a percentage of interest that does not change regardless of market conditions. In this regard, low-interest periods are typically a favorable time to take up a fixed rate loan, whereas floating interest rates fluctuate with the market, which can be beneficial or detrimental to the contractor depending on what occurs in the global and national economies.

Only 5% of respondents identified finance leasing as another way for commercial banks to finance the building industry. According to the findings of the study, finance leasing is a written or implied contract in which the owner (the less or) of a specific asset (such as equipment and machinery) grants a second party (the lessee) the exclusive possession and use of that asset for a specific period and under specified conditions in exchange for periodic rental or lease payments. Commercial

banks had previously offered loans to the owner (less or) in order to purchase necessary construction equipment, which would then be leased to the lessee. This, in turn, was discovered to lessen the stress and cost of obtaining new expensive construction equipment, particularly for new entrants' contractors who had not yet amassed the resources to do so.

Figure 4.18: Finance modalities



Source: Survey Result (2022)

Figure 4.18, on the other hand, demonstrated that 17% of respondents recognized bid bond/guarantee as another way for commercial banks to finance the construction industry. A bid bond is an instrument used by commercial banks to demonstrate to the project owner that the bidder (contractor) is capable of adhering to the bid contract and completing the job as specified. A bid bond is an additional assurance given to the project owner that the contractor will be able to take on and complete the project once it is chosen during the bidding process.

They would be more comfortable awarding a project to a contractor if they knew they could receive reimbursement from the surety bond provided by either the insurance firm or commercial banks if the project failed. When it comes to construction securities, the bid bond, performance bond, and advance payment are all interchangeable terms.

Further, the results of the interview revealed that overdraft and term loan are the most popular options. Based on this data, OD is highly important for day-to-day activities, it is not dependent on special projects, and it does not necessitate a significant amount of collateral. The parameters that

banks use to determine the maximum OD limit demonstrate that they place a premium on the firms' collateral worth, volume of work on hand, current asset liability gap, and contractor grade level.

Above all, according to the interview results, private banks are hesitant to give long-term loans, despite the fact that the construction industry relies heavily on long-term loans (long term loan in most banks context is greater than two years). Most banks believe they are doing everything possible to assist contractors with their cash flow problems. The profit-driven nature of banks encourages them to seek for low-risk, high-profit companies other than building. Banks give various arrangements for their customers that appear to be viable for them, and some of these arrangements are supplied for the construction sector. Banks also supply new facilities for their clients as technology advances. No arrangement that was previously offered to the building business has been closed out of the arrangements accepted by each bank. After all of this, most banks believe they have excellent relationships with contractors.

4.4.5.2. Risks Pertaining Financing Construction Sector

The study attempted to examine the risks faced by commercial banks in the construction sector. Respondents were asked to list the principal risks associated with financing the construction business in order of their preferences. Figure 4.19 shows that 45 percent of respondents ranked credit or default as the top risk, which refers to the risk that a borrower may default on the debt by failing to make required payments. The lender bears the majority of the risk, which includes missed principle and interest, cash flow disruptions, and higher collection expenses. Depending on the strength of the loan collateral, the loss could be total or partial. According to the findings of the study, default risk is reduced by a number of factors, including personal behavior in terms of a proclivity to fail to repay the loan.

Furthermore, the survey found that 32% of respondents cited economic uncertainties as additional risk that commercial banks would face while financing the construction industry. Changes in the current market conditions would be the source of economic risk. In this regard, economic risk would have a negative impact on foreign exchange rates in the event that a commercial bank approved a loan in a foreign currency, interest rate increases in the case of overdraft and floating interest rates, inflation, which would raise construction material prices beyond the budget.

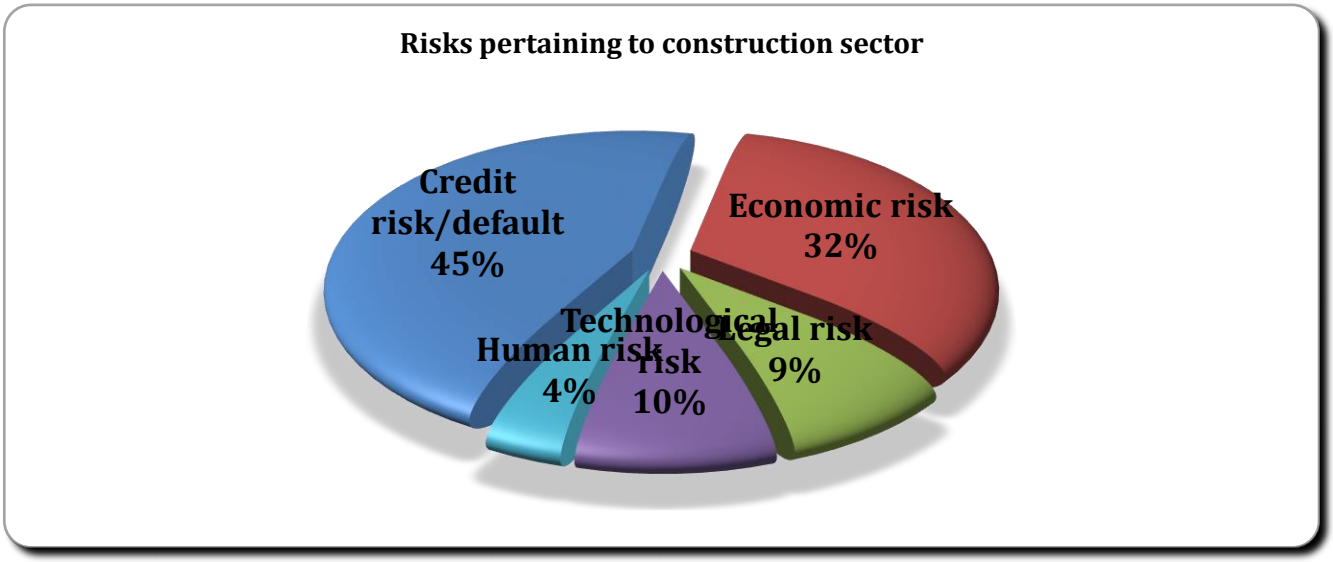
Similarly, 9 percent of respondents mentioned legal as another risk that commercial banks would

face while financing the construction sector in figure 4.19. According to the survey's findings, the government would modify the property's purpose or nationalize it, while banks would face difficulties in recovering the loans owed to the industry. On the other hand, many conflicts about project quality and timeliness would appear to be a danger to commercial banks.

The third risk highlighted by 10% of respondents was technological risk, which included unanticipated changes in construction procedures and materials. As a result of such a risk, technical obsolescence and other commercial hazards would arise. The survey also indicated that most Tanzanian constructors employed traditional land second hand equipment and machineries, which caused them to take a long time to complete the assignment and questioned the quality of the projects. The danger here is that foreign contractors will take over projects that have been granted to local contractors because of their superior technology, which ensure quality and efficiency.

Following that, data on figure 4.19 revealed that 4% of respondents mentioned human as a risk that commercial banks face when lending to the construction industry. Human risk could arise from an employee's dishonesty, industry-related accidents or deaths, or the project manager's or other key personnel's incompetence. Failure of suppliers to deliver construction materials or commodities on time, as well as debtor default, may have a negative impact on the construction industry and its counterpart commercial banks.

Figure 4.19: Risks pertaining to construction sector



Source: Survey Result (2022)

CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

5.1. Introduction

This chapter provides an introduction, discussion, conclusions, and recommendations on the cash flow concerns that construction enterprises face from project mobilization until project completion, as well as how these obstacles affect project performance. It also looks at how payment delays affect project operations, as well as the challenges of securing funding from traditional banking institutions. In this study, enterprises registered under the BC, WWC, Road Construction, and GC categories were investigated using a descriptive research design. The information was gathered using a questionnaire that primarily employed a Likert scale to assess the impact of cash flow, payment delays, and project funding limits.

The study population consisted of 18 contractor firms, with a sample size of 18 firms, from which 17 replies were received, resulting in a response rate of 94.44 percent. Similarly, 8 bankers were sampled, with a 100% response rate. Computing percentages to examine correlations between various variables in the study as guided by objectives was the data analysis approach used. The results were provided in figure and graphical representations accompanied by brief remarks.

5.2. Discussion of summary and findings

ObjectiveI: To analyze cash flow challenges of construction projects.

The project phases were classified into three categories in this study: mobilization, implementation, and closure. The goal of the study was to assess the severity of cash flow issues over these three phases, as well as how they impacted project performance (time, budget, and scope).

Cash flow was found to be the most difficult obstacle for Ethiopian construction enterprises throughout the mobilization stage, followed by implementation and closing. Furthermore, the study found that cash flow issues have a major impact on project success in terms of time, quality, and budget. Furthermore, cash flow issues had the greatest impact on project success in terms of time, quality, and budget.

Objective II: To assess the impact of payment delays on construction project operations.

According to the findings of this study, 72 percent of the companies surveyed were facing payment delays on ongoing or finished contracts. Furthermore, there was a strong link between payment delays and the execution of construction operations, such as paying site workers, serving creditors, continuing work, and paying suppliers. In this sense, late payments are a significant contribution to

cash flow issues and have a higher influence on project performance, particularly in terms of time and budget, due to material price inflation.

Objective III: To identify challenges of accessing financing from commercial banks

The findings revealed that the majority of the enterprises investigated (80%) had sought project funding from financial institutions, with nearly an equal number (79.1%) finding lending conditions restrictive to highly restrictive. The most stringent conditions for construction firms seeking project funding were requests for collateral, loan rates, and bank statements. Despite the fact that loan rates have been restricted, the majority of respondents still see this as the second most significant barrier to project finance.

Objective IV: To explore alternative solutions to address challenges of accessing financing and delay payments by contractors.

Finance for a project might come from both internal and external sources. Until now, we have attempted to obtain information about loan arrangements and associated matters from banks. Internal sources are another possibility for contractors to fund cash flow shortages in construction projects. Accounts receivable, accrued tax, wages payable, depreciation allowance, and retained earnings are all part of this internal source. The results showed that most contractors mostly source for financing from depreciation allowance (76%), wage payable (71%), account payable/ supplier (65%), retained earnings (59%) and accrued taxes (53%) when they fail to secure it from financial institutions.

5.3. Conclusions

During mobilization and execution, cash flow issues were more prevalent. Cash flow issues were also found to have a direct impact on project performance due to their impact on project operations, such as project delays and defaulted payments. Delayed payments contributed significantly to cash flow issues and had a bigger influence on project performance because of their impact on the execution of construction operations, such as paying site workers, serving creditors, continuing work, and paying suppliers.

Collateral, loan rates, and bank statements were the most stringent conditions for construction enterprises seeking project funding. When contractors are unable to obtain financing from commercial banks, the major internal sources of funds include accounts receivable, accrued tax, salaries payable, depreciation allowance, and retained earnings. Furthermore, after determining that cash flow issues are more prevalent during mobilization and implementation, and that they have a

direct impact on project operations, the study concluded that cash flow issues during the mobilization and implementation phases have a direct impact on project performance.

The findings of this study reveal that bank rules and regulations act as a barrier to obtaining a loan. Almost all of the loans they offer require a large amount of collateral, which limits the contractors' ability to obtain financing. Other means of pledging the loan for reimbursement of the perceived risk, such as letters of guarantee, are shown in the study. Banks, on the other hand, rely heavily on collateral. The importance of financial institutions in the development of the construction industry cannot be understated. As explored in the literature for this thesis, one of the key obstacles impeding the industry's development is cash flow. Despite their importance, the results of this study suggest that the help of these financial institutions is insufficient.

Despite the fact that banks have strict loan laws and restrictions, the connection between contractors and banks is excellent. Internal and external sources of money are available to business companies. Other parties are not involved in the internal sources of finance. The study's findings suggest that contractors understand how to use this source to fund their projects.

5.4. Recommendations

The following recommendations are made based on the study's findings to improve building projects by addressing contractors' cash flow issues and enlisting the help of local banks.

- Bank loan rules and regulations are rigorous, especially government loan rules and regulations, therefore for the betterment of the construction business, they should work closely with contractors and update the rules and regulations based on the preferences of their customers. As a result, banks should establish policies, laws, and regulations aimed at increasing financial resources allocated to construction enterprises in order to fully support expansion through easy access.
- Banks are more likely to lend to contractors who have a strong reputation, sufficient credit, and adequate cash flow ability. So that the contractor has enough funds to solve his financial problems and execute his projects successfully. Furthermore, it is ideal to grant the loan using accounts receivables as security for new entrants to the firm who have no reputation with the banks.
- The construction sector requires a lot of cash, and it's difficult to come up with enough collateral to secure the credit you need. In order to grant loans, banks should accept work

payment guaranty, third party guaranty, and work guaranty. Employers ask contractors to bring unconditional on demand advance payment guarantees, which have a larger commission than conditional on demand advance payment guarantees, in order to offer advance payment. As a result, employers should accept conditional on demand advance payment guarantees to help contractors with their cash flow problems. Furthermore, banks should look into measures for lowering lending rates to match those in other industrialized countries.

- To improve the contribution of one party to the problem of the other, they should work together to enhance the relationship between contractors, banks, and occasionally the employer. We urge that contractors prepare workshops through their associations and encourage banks to participate, especially for banks and contractors. Contractors should also organize expert training sessions for their employers on how to prepare project cash flow projections.

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Annex I

Questionnaire for Contactors

I am a student for Master's Degree of Project Management at St. Mary Post Graduate University doing dissertation on the "Role of banks in minimizing contractor's cash flow problem
A Case of Construction Sector. Please accord me with required information on this questionnaire to facilitate accomplishment of the said dissertation

Section A: Demographic Characteristics

1. Management Level: Project Manager ( ) Company Manger ( ) Officer ( ) or specify here( )
2. Age: 18 - 27 ( ) 28 - 37 ( ) 38 - 47 ( ) Above 48 ( )
3. Gender: Female ( ) Male ( )
4. Marital status: Married ( ) Divorced ( ) Unmarried ( ) Widowed ( )
5. Level of Education: Diploma ( ) First Degree ( ) Masters ( ) Doctorate ( )
6. Working experience (In years): Less than 1 ( ) 1- 3 ( ) 4 - 9 ( ) 10 and above ( )

Cash Flow Challenges

1. In which of the following works does your company involved in?
   BC [ ] WWC [ ] Road construction [ ] GC [ ]

Others_____

2. Does your firm prepare cash flow forecast for projects?
   Yes [ ] No [ ] Do not Know [ ]
3. If yes, which of the following professionals prepare cash flow forecast?
   Accountants [] Engineers Architects [ ] Construction Management Professionals [ ]

Others _____ .

4. Does your company consider cash-flow as a major problem for successful completion of projects?
   Yes [ ] No [ ] Do not Know [ ]

If yes, briefly explain why._____

5. Howdocashflowchallengescomparefrommobilizationphasetoprojectclosure?

Project Phases	Major Challenge	Moderate Challenge	Minimal Challenge	Not a Challenge
Mobilization				
Implementation				
Closure				

6. What are the consequences of cash flow problems and how often are they?

	Very common	Sometimes	A little common	Not common
Project delays				
Stalled projects				
Winding up				
Loss of credit worthiness				
Quality compromise				

Defaulting payments				
Decline new contracts				

Project Performance

1. Do cash flow challenges affect project performance?
   Yes [ ] No [ ]
2. To what extent does cash flow affect project performance?

	Great extent	Moderate extent	Minimal extent	Not at all
Time				
Quality				
Budget				
Scope				

Payment Delays

1. Haveyouexperiencedpaymentdelaysinthelastsixmonthsonongoingorcompletedworks?
   Yes [ ] No [ ]
2. What proportions of your projects have delayed payments?
   None [ ] 1-30% [ ] 30-60% [ ] Over 60% [ ]
3. Howoftenhaveyouexperiencedpaymentdelayswiththefollowingcategoriesofconstructionclients?

	Never	Sometimes	Often	Very often
Government				
Construction sub-contractors				
Private clients				
Higher education institutions				

4. How severe are payment delays for contractors in the Ethiopian construction industry?

	Not a problem	Moderately severe	Severe	Very severe
Post mobilization				
Implementation				

5. How significant is the effect of delayed payments on the following?

	Not significant	A little significant	Moderately significant	Very significant
Paying site workers				
Paying suppliers				
Continuing with works				
Bidding for new contracts				

Credit Financing by Commercial Banks

1. Have you ever sought for contract financing from financial institutions to boost your cash flow?
   Yes [ ] No [ ]
2. Do you find financial institution lending policies in Ethiopia restrictive for construction contractors?
   Yes [ ] No [ ]
3. What particular requirements do you find more restrictive for contractors?

	Not restrictive	A little restrictive	Moderately restrictive	Very restrictive
Collateral				
Time taken to process credit				
Lending rates				

4. To what extent has the following core lending requirements and time lines of financial institutions contributed to the question of availability versus accessibility of credit by contractors?

	Not at all	Very little	A little	Greatly
Collateral Bank				
Statement				
Lending rates				

5. When you fail to access credit from financial institutions, which is the most common alternative source of financing?

	Never	Last Resort	Sometimes	Most times	Always
Account payable					
Suppliers					
Accrued taxes					
Wage payable					
Depreciation allowance					
Retained earnings					

Annex II

Questionnaire for Banks

The following questions are prepared as an interview questions for the preparation of Graduation thesis as fulfillment of the requirement of the MSc program. We kind-heartedly Request you to answer the questions given below which are very seriously used for the Preparation of our thesis.

Please note: All the information provided will be treated in strictest of confidence.

Section A: Demographic Characteristics

1. Management Level: Directorate ( ) Managerial ( ) Officer ( )
2. Age: 18 - 27 ( ) 28 - 37 ( ) 38 - 47 ( ) Above 48 ( )
3. Gender: Female ( ) Male ( )
4. Marital status: Married ( ) Divorced ( ) Unmarried ( ) Widowed ( )
5. Level of Education: Diploma ( ) First Degree ( ) Masters ( ) Doctorate ( )
6. Working experience (In years): Less than 1 ( ) 1- 3 ( ) 4 - 9 ( ) 10 and above ( )

Section B: Please give you opinion

1. Do commercial banks finance construction sector?
   Yes ( ) No ( ) 10.
2. If yes on 1 above, what priorities do the banks give to the sector?
   First ( ) like any other customers ( ) can not rank ( )
3. May you please state the modalities used by commercial banks in financing construction sector at prost-project stage?
4. How would you measure the effectiveness of each modality using scale from 5 as strongest, 4 as strong, 3 as average, 2 as poor and 1 as poorest. ?
5. What are the requirements demanded by commercial banks in financing construction sector?
6. In your own opinions do you think construction firms manage to meet the stated requirements?
   Yes ( ) No ( )
7. What are your criteria to select customers specially contractors?

☐ Collateral value
☐ Credit worthiness of the company
☐ Cash flow ability of the firm

8. Will the bank provide loan for a construction firm if the client of a project guarantees work?
   ☐ Yes ☐ No ☐ do not know
9. Will the bank provide loan for a construction firm if the client of a project guarantees work payments of the project to pass through the bank?
   ☐ Yes ☐ No ☐ do not know
10. Do contractors use your assistance effectively?
    ☐ Yes ☐ No ☐ do not know

Please Explain why? _____

11. Have you faced contractors who fail to full fill his/ her obligation?

☐ Yes ☐ No ☐ do not know

If yes, what were the reasons? _____

12. From the arrangements in question number 1, is there an arrangement which has been provided previously, but not now?

_____

_____

_____

13. Do you think you are serving the construction business adequately?

☐ Yes ☐ No ☐ do not know

If no, what are the barriers for not doing so? _____.

14. Do you think that the financers (banks) are utilizing their maximum effort in order to help contractors' cash flow problems?

☐ Yes ☐ No ☐ do not know

Please Explain why? _____.

15. Do you have a plan to introduce new arrangements that can minimize cash flow problem of contractors which are not practiced in Ethiopia?

☐ Yes ☐ No ☐ do not know

If yes, what are they? _____

16. How do you rate your relationship with contractors specifically in minimizing their cash flow problem?

☐ Excellent ☐ Very good ☐ Good ☐ Fair

☐ Poor ☐ Very Poor

17. What do you recommend in order to maximize the contribution of banks in Minimizing cash flow problem of contractors?

_____

_____.

18. Do you think there are any risks pertaining to financing construction sector?

Yes ( ) No ( )

19. If yes on 17 above, state types of such risks.