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Financial Liberalization and Finance-Growth Nexus:

An Empirical Assessment of the Ethiopian Economy

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Abstract

Financial reforms have been part of reform packages in many countries as stabilization or/and growth tools. One of these countries is Ethiopia. The country has been engaged in financial reforms since 1992. They concur with the whole liberalization process in the country in a bid to kickstart the economy. The reforms are characterized by gradualism and domestic capacity building. This study is conducted to gauge the growth corollary of the financial reforms. It uses a multivariate linear regression model into which financial development indicators are plugged as extra explanatory variables. The data are time series data which span over 1980-2006. The result finds a significant progress in financial development following the reforms. The monetary and credit measures have improved since the reforms. The regression test also reveals a positive contribution of financial development to economic growth. More importantly, the result suggests a significant influence of credit intermediation on economic growth. The findings are consistent with much of empirical evidence that financial liberalization leads to stronger financial sector which is critical to economic growth.

List of Figures and Tables

Figure 2.1: A Functional Approach to the Theory of Finance and Growth…….....20

Table 3.1: Capital and Branch Network of Private and Public Banks……..32

Table 3.2: Capital and Branch Network of Private Insurance Companies…… …...33

Table 3.3: Aggregate Monetary and Credit Measures of the Pre-reform period……..35

Figure 3.1: The Course of Real Deposit Interest Rate and Total Deposits…….....36

Table 3.4: Aggregate Monetary and Credit Measures of the Post-reform Period….....37

Table 3.5: Financial Deepening Indicators……...……38

Table 3.6: Share of Mobilization, Loan Disbursement, Loan Collection and Outstanding Loans……40

Table 5.1: ADF Unit Root Test Results with Intercept……..……...…46

Table 5.2: ADF Unit Root Test Results with Constant and Trend……...46

Table 5.3: Results of Multivariate Model Using OLS Estimation Method……..47

Table of Contents

Acknowledgements……i

Abstract……..ii

List of Figures and Tables……..….iii

Table of Contents……..iv

Chapter I: Introduction…….....1

Chapter II: Literature Review……..……8

2.1: On the Concepts: Financial Repression, Financial Liberalization and Financial Development……...…….8

2.2: Finance and Growth – Theory……..…….11

2.2.1: The McKinnon-Shaw School and the Financial Liberalization Hypothesis……...……11

2.2.2: The Functional Approach and the Role of Financial Development…….16

2.3: Finance and Growth – Evidence……21

2.3.1: The Empirical Foundation of Financial Liberalization…….21

2.3.2: Financial Development and Economic Growth……...…….24

Chapter III: Financial Reforms and Financial Development in Ethiopia……..28

3.1: A Brief History of Banking in Ethiopia……..…28

3.2: Financial Reforms and Financial Development…….30

3.3: Performance of Public and Private Banks……...……..39

Chapter IV: Data and Methodology……..……41

Chapter V: Results and Discussions……...……46

Chapter VI: Conclusion……..49

References……I

Introduction

The link between financial liberalization, financial development and growth is a complex and a long mooted issue. The incipience of pubic debate on the role of finance in economic growth came from Romans when in the year AD 33 they debated on whether to state control a hitherto freely functioning banking. The intellectual emphasis began by Bagehot (1873) in his classic Lombard Street (Arestis and Sawyer, 2006). Yet the issue, mainly establishing the causal law, is not a settled one without ambiguity and controversy. Theoretical propositions and empirical evidence by different economists have been divergent.

One position advocated by economists like Bagehot (1873), Hicks (1969), Schumpeter (1912) argues that financial development is a key factor in economic growth. According to this position, financial development played a critical role in igniting industrialization in England by facilitating the mobilization of capital; and well functioning banks spurred technological innovation by identifying and funding those entrepreneurs with the best chances of successfully implementing innovative products and production processes. "The industrial revolution had to wait for the financial revolution" (Bencivenga, Smith, and Starr, 1996: 243) quoted in Levinn (1997: 692). A well developed financial sector leads to efficient resource allocation and growth. This is what Patrick (1966) refers to as the supply-leading hypothesis.[1]

[1] Patrick (1966) also proposed his stages of development hypothesis where finance-growth causality can be defined. The causality changes overtime as the economy evolves. At the early stages of the economic development, the supply-leading force of financial development is in operation, causing growth as a result of the transfer of resources from traditional to modern sectors, with greater entrepreneurial response in these modern sectors. Yet, as the process of economic development proceeds, the force fades away and eventually the financial system responds automatically to the demands created by output growth for financial arrangements.

On the other hand, economists like Robinson (1952) argue that financial development follows growth. Economic development creates demands for particular types of financial arrangements and the financial system responds automatically to these demands. It is simply a sideshow that comes about by the growing economy. In the words of Robinson, "where enterprise leads, finance follows" (Robinson, 1952: 86) quoted in Levine (1997: 688). This is what is implied by the demand-following hypothesis, an alternative hypothesis put forward by Patrick (1966) of the possible causality between finance and growth.

There are also economists who believe that the finance-growth link is not that important. Lucas (1988: 6), cited in Levine (1997), point out that economists "badly over-stress" the role of financial system. Development economists too, by overlooking the subject frequently, cast their doubt about the financial sector role (Levine, 1997)).

The diverging views notwithstanding, there is now a growing consensus among economists that the effect of financial system is positive and substantial. Explaining this episode, Levine (1997:688-689) noted that

Although conclusions must be stated hesitantly and with ample qualifications, the preponderance of theoretical reasoning and empirical evidence suggests a positive, first-order relationship between financial development and economic growth. A growing body of work would push even most skeptics toward the belief that the development of financial markets and institutions is a critical and inextricable part of the growth process and away from the view that the financial system is an inconsequential side-show, responding passively to economic growth and industrialization. There is even evidence that the level of financial development is a good predictor of future rates of economic growth, capital accumulation and technological change.

Goldsmith (1969), McKinnon (1973) and Shaw (1973) put the poor investment and growth profile of developing countries in the 1950s and 1960s down to interest rate ceilings, high reserve requirements, quantitative restrictions in the credit allocation mechanism, and heavy reliance on inflation tax. These restrictions led to financial

repression[2], epitomized by low savings, credit rationing and low investment.[3]They came up with the thesis that has come to be known as "financial liberalization" which amounted to "freeing" financial markets from any intervention and letting the market determine the allocation of credit (Arestis and Sawyer, 2006: 348).

The hypothesis they brought in to table in the face of extensive government intervention in financial sector coupled with the struggling economies in the 1970s and 1980s instigated heated debates on the use and implementation of financial liberalization. Financial liberation entails the following testable hypotheses (Hossain and Chowdhury, 1996:56):

- *there is positive correlation between the real deposit interest rate and the savings rate - the volume effect;*
- *the real deposit interest rate and the degree of financial deepening are positively correlated - the composition and efficiency effect;*
- *the positive and high real interest rates raise the level and efficiency of investment;*
- *financial deepening promotes economic growth - trade and specialization effect or the transaction technology*.

In part persuaded by the theoretical arguments and the balance of evidence that stands in favor of the hypothesis and the pressures from IMF, by the 1980s and 1990s many developing countries were on the cusp of a new era in financial sector management. They

[2] The financial repression and inflationary finance of the day was influenced by the forced saving school of thought to development finance. For many resource-constrained developing countries, this inflationary finance approach was a relief and a comfortable yet hazardous way to meet the economic and political demand of their people. The link between inflation and growth is indeed complex and not with settlement. Economic records point to the randomness of the effect of inflation on growth (that is, it can be positive or negative depending on the amount and variability of inflation). While, albeit not robust, low and stable inflation promotes, high and unstable one impedes growth.

[3] Their argument was based on the classical view of economic growth theory that saving is the constraining factor of economic growth.

have since adopted financial liberalization at various degree by removing some of the barriers to the operation of market mechanism.

Financial liberalization entails removing explicit controls on the pricing and allocation of credit; allows the market to determine interest rates; encourages competition as a result of easy entry, less regulatory practices and less public ownership of financial institutions; reduces reserves and liquidity requirements; abolishes controls on international capital movements.

Financial liberalization in no way, however, should mean complete hands off by the government. Governments will have a participatory role in the financial sector in a number of ways: banks will come supervised for prudential reasons; some banks may be publicly owned; and a government may be a major borrower. The failure to put adequate and effective supervision in place was one of the factors behind the financial bedlam in the Southern Cone countries, the Philippines, Turkey, Mexico, the Oriental countries in the 1980s.

Because of its fragile nature (mainly attributable to moral hazard and adverse selection), financial markets can't be left on autopilot and the efficacy of financial institutions in a deregulated environment requires optimal combination of check and balance system of regulation and supervision, and market forces. This means for the financial system to be safe and efficient, different laws governing companies, banks, financial institutions, and bankruptcies, accounting, auditing and information disclosure rules are indispensable. Ensuring the quality of loan portfolios, capital sufficiency and bank management soundness is too sine que non.

The success of reforms is contingent on appropriate macroeconomic policy, structural reforms, the optimal level and appropriate sequencing of reforms, institutional development, the political sustainability of the reform process, and the caliber of authorities to provide it with practical shape (Pill and Pradhan, 1997; Hossain and Chowdhury, 1996; Arestis and Sawyer, 2006). In relation to this, Honohan (1992:90), as mentioned in Hossain and Chowdhury, 1996:95) noted that:

Prudential regulation, designed to ensure that intermediaries are operating in a safe and sound manner, is necessary as a general background of the smooth functioning of the financial system. It is further argued that even regulation of interest rate can be non-distorting to the extent that it merely serves to prevent speculative mispricing of financial assets. The appropriate policy stance thus becomes a question of balancing the need for establishing and policing the basic 'rules of the game' for the financial system, with the need to give financial intermediaries the freedom to do that for which they are uniquely specialized, namely credit and risk appraisal and pricing. This perspective provides a bridge between those who criticize financial repression and those who caution against reckless financial liberalization.

Ethiopia, being one of the developing countries, has its own take on this. The country had enjoyed a quasi-market economy pre 1975 during which the financial sector was free to some extent; but the development of the financial sector devolved with the taking over of private banks in 1975 by the military government immediately after regime change. This government had exercised the command economy till the early 1990s. The financial sector was under the rigid and pervasive government surveillance, earmarked by centrally determined interest rates, control by public financial institutions, low financial intermediation, low saving mobilization. This enervated the financial sector depth and development.

After the change of the regime in 1991, to tinker with the ailing economy, different policy measures were undertaken towards the market-led system. The government initiated financial reforms as components of the whole liberalization program to transmogrify the status quo . The policy shift has brought about a considerable improvement in the status of the finacial sector. It opened up the door for private involvement which has been increasing since (Geda, 2006).

Needless to say, the incidence of poverty that has beset the country is pathological. The macroeconomic fundamentals are weak, per capita income is among those at the nadir, the private sector is at a relatively infant stage, and the economy is less monetized. It is to address these gray phenomena that market-friendly policy measures have been introduced.

The objective of this paper is to empirically examine the connection between financial liberalization, financial development and economic growth in the country. Specifically it attempts to address the following questions:

i. Does financial liberalization enable financial development?
ii. And in consequence, does financial development lead to economic growth?

To materialize this, I use time series data ranging over 1980-2006 to do both the descriptive and econometric analysis. The econometric analysis is based on multivariate regression model in which financial depth indicators are included as explanatory variables. The OLS estimation technique is applied.

This country-case study may help catalyze further inquiry into the financial sector of the country. Since the country has opened up its domestic financial sector, it is worthwhile to assess the pass-through of financial services in economic performance. The study may also be a value addition to the log of empirical works on the young financial sector of the country. The importance of careful analysis and policy adjustment with regard to financial affairs evolves with the progress of the financial sector. In respect of economic literatures, as the economy rolls on, so does the potency and intricacy of the financial sector. A healthy economy is fundamentally attached to a healthy financial system. So the sustainability of Ethiopia's economic achievement rests on vibrant and well-institutionalized financial sector which in turn piggybacks on research and development.

This study is limited in that it does not address policy measures taken in relation to the external sector reform and their effects on the economy. The other shortcoming may be that it doesn't test the direction of causation between financial factors and growth.

I shall organize the remainder of the paper in the following manner: chapter two presents economic literatures. Conceptual frameworks, functions of the financial system and the pathway through which these may affect the economy, theoretical and empirical works

will be reviewed. Chapter three will take on financial reforms and financial development in the country. By juxtaposing pre and post reform periods, it discusses the financial development impact of the reform. Chapter four covers data sources, model specification, variable selection and definition, estimation methods. Econometric results will be analyzed in chapter five. The last chapter is reserved for conclusion.

Chapter II
Literature Review

The finance-growth nexus has entertained conflicting views by different economists. The main wedge issue between economists is the direction of causality. While some argue for the finance-leads-to-growth paradigm, others contend otherwise - that is, finance is simply a consequential sideshow of growth. That said though, there is a general consent that there is a significant positive correlation between finance and growth. Because of this, financial reforms that promote the financial sector of a country have seen a trend. In this chapter, I present some background concepts in relation to the topic, the pro- and anti-financial liberalization theoretical developments, and empirical works.

2.1 On the Concepts: Financial Repression, Financial Liberalization, and Financial Development

Financial liberalization was evoked by the McKinnon-Shaw school in the early1970s in response to the widespread financial repression, also originated in their works, in many developing countries. Financial liberalization is the flip-side of financial repression.

Financial Repression

Oxford dictionary of economics defines financial repression as the imposition of liquidity constraints through allocation of loans by administrative means rather than use of the market. It is characterized by government interventions in the form of interest rate regulations which often result in low (negative) real interest rate, directed credit schemes and high reserve ratio.

In the 1960s and before, this type of financial environment was the hallmark of many developing countries. Fiscal constrains were the main reason behind this. As most of the governments of these resource-limited countries had to meet the political and economic demands of their citizenry, they resorted to imposing large liquidity and reserve requirements to create a captive demand for their own interest bearing or non-interest bearing instruments respectively (Agenor and Montiel, 1996). Also, they directed credit

to finance their prioritized sectors. By ceiling nominal interest rate at a lower rate and by limiting financial instruments available to the public such as foreign exchange deposits, governments were engaged in seigniorage revenue and tried to encourage investment in conformity with the forced saving school (Ucer, 1997:; Hossain and Chowdhury, 1996).

The McKinnon and Shaw school argue that financial repression inhibits growth as it fragments the domestic capital market, adversely affecting the quality and quantity of real capital accumulation (McKinnon, 1988; McKinnon, 1993). They stated the following four main channels through which financial repression negatively affects capital accumulation and hence growth (Ucer, 1997):

- *The flow of loanable funds via the organized banking system decreases forcing investors to rely more on self-finance;*
- *Interest rates on the truncated flow of bank lending vary from one class of favored or disfavored borrower to another;*
- *The process of self-finance itself is impaired. If real deposit interest rate is negative, firms can't easily accumulate liquid assets in preparation for making discrete investments and socially costly inflation hedges look more attractive as a means of internal finance;*
- *Significant financial deepening outside of the repressed banking system becomes impossible when firms are dangerously illiquid and/or inflation is high and unstable; robust open markets in stocks and bonds, or intermediation by trust or insurance companies, require monetary stability.*

Financial Liberalization

Narrowly defined, financial liberalization means elimination of directed credits and high reserve requirements, letting interest rates be determined by the market forces rather than by regulation. In a broader sense, however, it includes a wide set of extra measures such as the easing of portfolio restrictions on banks, changes in the ownership of banks, enhanced competition among banks, integration of domestic entities to international markets and changes in the monetary policy environment. Of theses, external sector

reforms go hand in hand with financial sector reforms because removing restrictions on exchange and payment systems and establishing a freely functioning foreign exchange market are central to removing distortions that limit portfolio behavior. Reforms of this type involve two phases: removal of all restrictions on current payments and transfers, and capital account liberalization; the latter by enhancing country's integration with the rest of the world, imposes perhaps the strictest limits on financial repression.

The reform of the institutional context of the monetary policy implementation principally reckon with increased independence for the central bank and a switch from direct instruments of monetary control like interest rate controls, bank by bank credit ceilings, statutory liquidity ratios, direct credits, bank by bank rediscount quotas to indirect instruments such as reserve requirements, rediscount and Lombard window, public sector deposits, credit auctions, primary and secondary market sale of bills, foreign exchange swaps and outright sales and purchases. The main idea here is for central banks to stimulate the growth of money markets and instruments with a view to enhancing market orientedness of its policy environment. In general terms, this would imply for the central bank to cease direct control over bank behavior in its conduct of monetary policy (e.g. credit controls with a view to controlling the path of broad monetary aggregate) and move toward indirect means such as controlling aggregates from its balance sheet through market oriented instruments mainly open market operations. This substantially alters monetary policy implementation i.e. the behavior of money demand, money supply processes, and the link between the targets and instruments. While these changes create problems for a policy maker in policy management, the real difficulty is posed by the ongoing uncertainties in macroeconomic environment (Ucer: 1997).

2.2 Finance and Growth - Theory

2.2.1 The McKinnon-Shaw School and the Financial Liberalization Hypothesis.[4]

In 1950s and 1960s the financial sector of many developing countries was dominated by financial repression. This was largely due to the influence of the forced saving Keynesian school. This school stresses that since investment, not saving, is the impediment to growth, a low (negative) real interest rate induces individuals to switch from holding financial assets to forced private investment. Thus, to the extent that a higher rate of inflation keeps the real interest rate low, inflation is a necessary price to promote growth. The policy implication that follows from this school is financial repression, mainly in the form of interest rate ceilings. Tobin (1965) developed what is now called the 'Tobin effect' to rationalize the forced saving hypothesis. He employed the one sector neoclassical growth model of Solow (1956) and Swan (1996) to put forth his idea. The following model shows this:

$$Y = f(K, L)$$

Where Y, K and L are total output, capital stock and labor force respectively. If we divide both sides by L, we get the per capita form .i.e.

$$y = f(k)$$
$$\frac{\partial y}{\partial k} > 0 \quad and \quad \frac{\partial^2 y}{\partial^2 k} < 0$$

Where y and k are per capita output and capital intensity correspondingly.

In non-monetary model, individual savers save by acquiring real capital, k, and thus k becomes the only form of wealth. In the basic monetary growth model, however, per capita real money balances, m, also serve as extra form of wealth. As a result, the per

[4] This sub-section depends on Hossain and Chowdhury (1996). In addition, Eschenbach (2004) is used as extra source. For critical reading, a reader can refer to Hossain and Chowdhury (1996).

capita wealth, w, equals the sum of per capita capital, k, and Per capita real money balances, m.

The demand for real money balances depends on income and nominal interest rate, i. That is,

$$m = m(y, i)$$
$$\frac{\partial m}{\partial y} > 0 \ \ and \ \frac{\partial m}{\partial i} < 0$$

Where nominal interest rate (i) = Inflation (π) + Rate of return on real capital (r_k)

Now assume that the stock of nominal money is exogenously determined to grow at a rate of μ. When the demand for per capita real balances is constant, the equilibrium condition for the money market ensures that the rate of inflation is the difference between the growth rate of nominal money and the growth rate of population, n. That is,

$$\pi = \mu - n$$

Supposing nominal interest rate on money is zero, Tobin suggests that a rise in inflation will reduce the real return on money and as a result money balances becomes less attractive to hold as a form of wealth relative to the return on real capital. Therefore, a higher rate of inflation encourages a portfolio switch from money in to real capital which raises capital intensity and hence real output.

In the early 1970s McKinnon and Shaw initiated academic attack against the Keynesian forced saving school and attributed much of the low level of saving, investment and the consequential general economic gloom of the developing world to the policy prescription the forced saving school has produced - the financial repression.

Both, on separate basis and with different approach, developed the financial liberalization hypothesis. McKinnon yielded the complementarity hypothesis whereas Shaw came up the debt-intermediation view. Both models rest on different assumptions. While

McKinnon assumed that investors are constrained to self-finance which makes deposit and real capital complementary and that there are important indivisibilities in investment, Shaw held that they are not restricted to self-finance due to the existence of financial intermediaries, and the complementary of money and capital is not necessary. Because of this, McKinnon's model is now dubbed the Outside Money model and that of Shaw is the Inside Money model. That said though, both models essentially have the same destination: financial liberalization promotes growth. The difference may be that McKinnon model is applicable to the developing countries where capital markets are rudimentary whereas Shaw's model to the developed countries. Below is the simplified version of the McKinnon model:

McKinnon does not distinguish between savers and investors. For entrepreneurs to invest, they have to first deposit to invest later - prior saving. This makes deposits and real capital intertemporally complementary.

$$m^d = m^d(y, iyr, d - \pi) \quad (1)$$
$$\pi = \pi(\mu, g_y) \quad (2)$$
$$iyr = iyr(r_k, d - \pi) \quad (3)$$
$$iyr = syr = s \quad (4)$$
$$s = s(g_y, d - \pi) \quad (5)$$
$$g_y = \rho s(g_y, \theta) \quad (6)$$

Where $m^d, y, iyr, d - \pi, r_k, syr, s, g_y, \mu, \rho, \theta$ are real money demand, real output, the ratio of investment to output, real deposit interest rate, real return on physical capital, the ratio of saving to income, propensity to save, output growth rate, exogenous nominal money growth rate, fixed output capital ratio and proxy for financial development respectively.

All the partial derivatives of equation 1 and equation 2 are positive. Moreover, the partial derivative of ρs with respect to θ is positive.

Equations 1 and 2 show the complemenarity between money and physical capital. McKinnon argued that a financial reform which raises financial development from θ to $\bar{\theta}$ will increase saving from $\rho s(g_y, \theta)$ *to* $\rho s(g_y, \bar{\theta})$ and hence growth. He separated the higher saving from this reform into the 'pure intermediate effect' - the propensity to save due to higher degree of intermediation at a given growth rate, $g_y = \rho s(g_y, \bar{\theta})$, and the saving from the growth dividend $g_y^h = \rho s(g_y^h, \bar{\theta})$ - the portfolio effect when individuals keep their portfolio balance in the face of higher economic growth rate, g_y^h.

Critique of the Financial Liberalization Hypothesis

In the wake of the weak empirical foundation, the financial liberalization hypothesis has encountered challenges from different angles such as the
neo-structuralists and the mild repression advocates both theoretically and empirically.

Neo-strucralists based their critique on the empirical findings of Wijnbergen (1982, 1985) which show that the major effect of financial reform in Korea was simply the portfolio switch of savings from the informal sector to the formal sector while total saving remaining intact. Therefore, whether financial reform augments growth depends on the relative efficiency of these sectors. They also based their attack on the so-called the Cavallo effect (Cavallo, 1977) which argues that since in developing countries firms depend heavily on borrowing, the portfolio shift of savings from informal sector to the formal sector decreases the supply of loanable funds because of the reserve requirement that the formal sector deposits have to meet. This will create credit squeeze and drives up the cost of working capital for firms leading to stagflation (Bruno, 1979; Taylor, 1979, 1983).

The strongest attack came from economists Amsden (1989, 1991), Lee (1992), Wade (1988), Stiglitz (1994) who went further to stand for mild repression. Some of them invoked the capital-based and the credit-based financial system to substantiate their view. In a capital-market based system where short and long term debt instruments are traded,

firms have a wide set of alternative sources to finance their activities. In credit-based system – common in developing countries - however, firms have limited options and rely heavily on banks. In such environment if banks (and transitively firms) are reliant on the government, financial repression in the form of government-directed credit may be helpful (Wade, 1988). First, a credit based system enables a faster investment in developing country conditions than would be possible if investment depended on the growth of firms 'own profits or on the inevitably slow development of securities market. Plus, the big advantage is that productive investment is not hit by the speculative stock market booms and busts. Second, a credit based system tends to avoid the bias towards the short term profitability often related to the stock market system and may help commit resources to the more productive long term investment. Third, a state dominated financial system avails the government a necessary political clout to implement its industrial strategy.

Stiglitz (1994) claimed that much of the criticism against financial repression was based on erroneous empirical findings. He maintains that financial markets are endemic to market failures from information asymmetry and hence, they are not constrained pareto optimal. This scenario rationalizes government intervention to make all agents better off. Stigiltz outlined several ways in which financial repression (low interest rate) policy can shore up growth: first, the low interest rate can help transfer resources from households with low propensity to save to the corporate sector with high propensity to save, with predictable enhanced growth. Second, low interest rates could increase the expected quality of borrowers by reducing the adverse selection and incentive problems. Low interest rate also reduces the cost of capital and thereby increases the firm's equity which lessens the prospect of bankruptcy. Moreover, when more of their own capital is at stake, firms are more likely to select good projects. Third, when interest rate is low, directed credit policy can be used as incentive scheme to increase competition and performance of firms to meet some measurable targets like export or foreign exchange earnings.

2.2.2 The Functional Approach and the Role of Financial Development.[5]

In recent times many models have been developed to show how a well developed financial system may lead to economic growth. Mainly the 1990s endogenous growth models have revitalized the role of financial system and gained them a wide spectrum. Levine (1997), in his study of finance and growth ties, used two possible channels namely capital accumulation and technological innovation through which financial system may affect growth. By providing the financial functions (which I return to later on), the financial system affects capital accumulation either by altering the saving rate or by reallocating savings among different capital producing technologies, and the rate of technological development by supporting the innovation of new production technologies.

Financial development is the process where by the quality and quantity of financial services provided by the financial structure - the mix of financial instruments, markets and institutions - have upped to ameliorate the problems posed by market frictions. It involves improvements in producing information ex-ante about possible investment opportunities and allocating capital, monitoring firms and exerting corporate governance (ex-post function), facilitating the trading, diversification and management of risk, mobilization and pooling of savings, and facilitating the exchange of goods and services. By providing these services, the financial system captures the real variable status in economic growth models (Levine, 1997).

Producing Information and Allocating Capital (Ex-ante function)

There are large costs associated with identifying and evaluating firms, managers and market conditions. Individual savers may not have the capacity to shoulder these large costs. This creates a situation where individual savers become reluctant to invest in possible investments and as a result, this may prevent capital from flowing into its highest value use. This high information cost becomes a source for financial

[5] The source for this section is Levine (1997).

intermediaries to emerge. To exemplify this, assume that there is Birr[6] X fixed cost in acquiring information. Further assume that there are N individual investors. With the presence of incomplete information, each investor has to pay Birr X totaling Birr NX for all. But with the formation of financial intermediaries to economize on costs of acquiring and processing information about investments by these individuals, the only cost they incur is Birr X. They are saving (NX-X) Birr. This has growth implication: as many firms and managers will require capital, financial intermediaries help improve resource allocation and thereby, faster growth by identifying firms and managers with the best production technologies and chances of creating new goods and production processes. This was modeled by Boyd and Prescot (1986), Allen (1990), Greenwood and Jovanovic (1990), King and Levine (1993) and others.

There are also theories about the role of stock markets in growth. Though the existing theories by Grossman and Stiglitz (1980), Kyle (1984), Merton (1987), Holmstrom and Tirole (1993) and others have not clearly established the chain, stock markets are expected to stimulate the acquisition and dissemination of information about firms. As these markets become larger and more liquid, the incentives to exert resources to solicit information by the agents to get profited from information advantage become larger. This improved information is supposed to lead to better resource allocation and hence growth.

Ex-post Monitoring Firms and Exerting Corporate Governance

There are also large costs associated with monitoring firms and exerting corporate control once finance is released. This friction catalyzes the emergence of financial contracts, markets and intermediaries to lessen the information acquisition and enforcement costs. Firm owners and outside creditors (banks, equity and bond holders) that can't manage firms on the day-to-day basis influence managers to act in the best interests by creating financial arrangements (collateral and financial contracts like voting on crucial issues, writing managerial incentive contracts). If these financial arrangements don't exist, mobilization of savings from disparage agents will be impaired and capital may flow to

[6] **Birr is the local currency of Ethiopia.**

less efficient investments. In addition to these financial contracts, well-diversified and long-established financial intermediaries can reduce costs even further. If firms depend on external finance, financial intermediaries, by collecting savings from many agents and channeling theses resources to firm owners, can economize on monitoring costs. This 'delegated monitor' arrangement helps to reduce total monitoring costs since borrowers are monitored only by the intermediary not by all individual savers (Diamond 1984). A financial system that facilitates corporate control "also makes possible the efficient separation of ownership from management of the firm. This in turn makes feasible efficient specialization in production according to the principle of comparative advantage" (Merton and Bodie, 1995:14).

Stock markets too may improve corporate control. Well functioning stock markets, by reflecting information about firms, help owners to link managerial compensation to stock prices and to exert takeover threats of those malfunctioning firms.

The overall implication is that this facilitates efficient resource allocation which leads to better economic environment.

Facilitating the Trading, Diversification and Management of Risk

Informational asymmetries and transaction costs that impede liquidity (i.e. the speed and ease with which agents can convert assets in to purchasing power at agreed prices) and that accelerate the liquidity risks (i.e. the uncertainties to convert highly productive but risky assets in to most liquid assets which are safe but unproductive) give rise to the creation of financial markets and institutions. Liquid capital markets ease the trading of financial instruments and reduce the uncertainties about the timing and settlement of those trades.

High return projects and innovations require a long term commitment of capital but savers are not ready to give away control of their savings. Put differently, high return investments are riskier while savers don't like risk. Therefore, financial systems that increase the liquidity of long term investments promote long term development. Different

economists like Patrick (1966), Greenwood and Jovanovic (1990), Acemoglu and Zilibotti (1997), Diamond and Dybvig (1983), and Allen and Gale (1997) have developed different model arrangements to establish this link.

Mobilization (Pooling) of Savings

Mobilization involves collecting capital from disparage households (savers) for various investment purposes. It also involves the creation of small denomination instruments which help diversify their portfolio, invest in efficient firms, and increase asset liquidity. Yet, Pooling of resources from individual savers is a costly process; it involves overcoming the transaction costs of savings agglomeration and the information asymmetries associated with persuading household savers to transfer control over their resources.

Financial markets and intermediaries economize on these costs due to their economies of scale. Financial markets help multiple bilateral contracts between productive units raising capital and individuals with surplus resources. Joint stock Company, for example, lets them to invest in one firm rather than to buy the entire entity. Intermediaries galvanize resources from various sources to invest in multiple firms that can broaden the scale of efficiency. Therefore, financial systems that are better at savings mobilization improve resource allocation, leading to more capital accumulation and technological innovation (Sirri and Tufano, 1995; McKinnon, 1973).

Facilitating Exchange

Financial intermediaries can also facilitate exchange, specialization, innovation, and economic growth. Adam Smith in his seminal work, the Wealth of Nations (1976), stressed that division of labor (specialization) is the main factor underlying productivity improvements. By describing the advantages of the money economy over barter economy on account of the use of money in the former case and costly identification of the attributes of goods in latter case, he argued that lower transactions costs would permit greater specialization as specialization requires more transactions than an autarkic environment.

Modern economists have tried to establish the link. Grenwood and Smith (1997) for example modeled the connection between exchange, specialization and innovation. More specialization requires more transactions. Because each transaction is costly, financial arrangements that lower transaction costs will facilitate greater specialization. There may also be feedback from productivity gains to financial development. The higher per capita from productivity gains means that the establishment costs of the financial markets becomes less burdensome as a share of the per capita income.

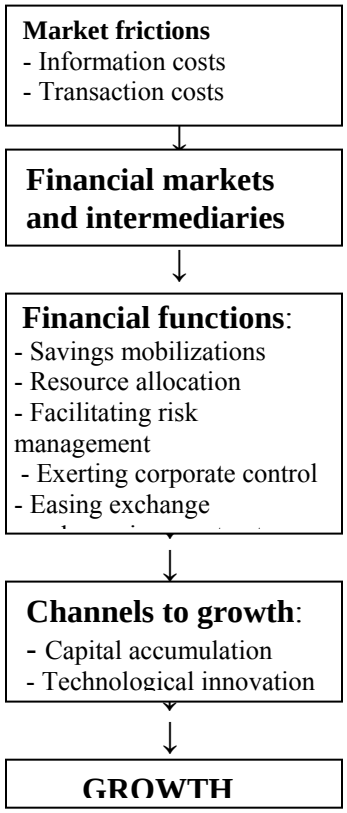


Figure 2.1: A Functional Approach to the Theory of Finance and Growth
Source: Levine, 1997.

2.3 Finance and Growth - Evidence

2.3.1 The Empirical Foundation of Financial Liberalization[7]

On empirical grounds financial reform is not an outright gain or loss. Empirical findings show that it has been accompanied by a mixed failure and success stories. There are countries which have reaped some benefits and there are also who had gone through toxic economic and political environment after the reform. All empirical literatures indicate that the outcome is contingent on whether the reforming country implemented the reform under (un)stable macroeconomic fundamentals like budget deficits, inflation, external balance; whether it took reform measures in seriatim and in gradual manner; whether reform measures are supported by effective and adequate prudent regulation and supervision with capable institutional setup. Those who reformed gradually under stable economic environment and with prudent regulation have been able to garner benefits from financial liberalization.

Empirical studies have been conducted in the Southern cone countries, in oriental countries, in Africa and others that have introduced reform in one form or another.

One of the talking points in academic circles is Argentina. The country under its military government undertook financial reforms in 1977 in unstable economic environment with large budget deficits and high inflation. Amongst the main reform measures implemented were the elimination of interest rate controls, the relaxation of bank branching and entry regulations, the abandonment of selective credit controls, the liberalization of foreign borrowing and foreign exchange transactions on capital account, the pronouncement of a schedule of devaluation of domestic currency, and the strengthening of prudential regulation and supervision (Sundararajan and Balino, 1990).

The promise of the financial reform and the dream of success went awry. The country passed turbulent financial crisis and financial reform was to blame. The crisis started with

[7] The main source for this is Hossain and Chowdhury,1996;Eschenbach (2004) is also used as additional source.

the failure of a large private bank and the problem spread quickly to other banks and other financial institutions. Over 70 financial institutions were liquidated or intervened accounting for 16% of total assets of commercial banks and 35% of total assets of finance companies (Sundararajan and Balino, 1990). High real interest rates, loans of dubious quality, inadequate and ineffective supervision, and overvalued real exchange rates were identified as factors behind the mess.

The other Southern cone country hard hit by the financial crash is Chile which started its financial reform in 1974 by permitting new non-bank financial institutions to freely determine the short term interest rate. In April 1975 the Augusto Pinochet government began denationalizing commercial banks many of which acquired by private conglomerates (aka grupos). In subsequent years the government also implemented many other measures like the freeing of interest rate. The outcome was a rapid rise both in the number of financial institutions and the volume of intermediation (Corbo and de Melo, 1987; Edwards and Edwards, 1987; Velasco, 1988).

The country's financial sector started to encounter problems in the late 1976 and early 1977 with the bankruptcy of a number of non-bank financial institutions. The government took corrective measures to tackle the problem yet the early signs signaled that the reform was carried out without adequate and effective regulation and supervision. For example, the government allowed many informal financial institutions to operate with out controlling them. It also allowed grupo-owned commercial banks to channel a large portion of loans to grupo-owned or controlled firms. These large loans were bad loans but were rolled over. As an excessive false demand for credit was generated during the 1977-78 boom, the rolling over of bad loans increased the real interest rate sharply. High real interest rates and overvalued exchange rates were the main culprits.

The financial meltdown of the country commenced in November 1981 when the government nationalized three banks and four nonbank financial institutions. They together shared one third of the loan portfolio of the financial system. The entire 1982 was dominated by rumors, bank problems, and in a way that validates this, the

government took seven banks and one nonbank financial institution under temporary government management (Velasco, 1988). Three of which were liquidated immediately and central bank inspectors were put in seven other financial institutions (Sundararajan and Balino, 1990). Despite the reform, the Chilean data indicate that the average saving rate for the liberalization period (1974-81) rose only marginally to 12.6 % from 12% during 1960-73 - the period of financial repression.

In response to these empirical failures, however, the advocates of financial liberalization cite the Asia countries' experience to vindicate their hypothesis. Amid the heyday of financial repression, Taiwan (1950s), South Korea (1965) and Indonesia (1968) took some financial reforms and succeeded. This even formed the basis for the theoretical development of financial liberalization hypothesis.

Taiwan is perhaps the main success story of all. The country implemented financial reform in the 1950s when its banking system introduced a high interest rate. Since then, it has made efforts to keep real deposit rates positive and succeeded in that except in the 1970s. This financial reform has led to a rapid growth of financial assets. For example, the ratio of broad money (M2) to out put has risen from 16% during 1953-60 to 110% during 1981-90. Nonetheless, the country's financial sector remained regulated and uncompetitive on account of the dominance of state owned banks which mainly undertake government policy directives.

Another success story is South Korea who took financial reforms at the advice of a US aid mission to replicate Taiwan. South Korea raised the weighted average nominal interest rates on all classes of time and savings deposits from to 24% from 15% per annum on one year time deposits. Following the decline of inflation from 35% in 1966 to 10% during 1965-70, the real one-year time deposits interest rate waxed from minus 15% to 17%. McKinnon and like-minds attributed the growth of the South Korean economy to this high positive real interest rate. In 1970s, however, the country relapsed to low interest rate policy to combat domestic recession and to support its heavy industrialization policy. Its heavy industrialization policy went unsuccessful and once

again it retooled the financial sector with many measures such as the deregulation of non-bank financial institutions, the easing of entry barriers, privatization of state-owned commercial banks, the approval of foreign bank branches, the elimination of preferential lending rates, and a ban on introducing new directed credit program to encourage competition by the end of 1980s. Despite these measures, essentially its financial sector remained regulated and under the control of the government.

Indonesia made a cautious and gradual financial reform in the form of higher interest rate in 1968 as part of the Indonesian government's economic stabilization program primarily to fight against a three-digit inflation. When inflation fell in 1969, real deposit interest rate became positive and hence real balances holdings by the depositors rose. Nevertheless the dominance by the state banks of its financial system couldn't make efficient use of its increased real balances. Therefore, monetary reform had no immediate impact on economic growth (McKinnon, 1973).

2.3.2 **Financial Development and Economic Growth**.

Numerous empirical studies at the cross-country level, at a country level, at industrial level and at a firm level have been conducted to examine the link between financial development and growth. There is generally a positive correlation between growth and financial development. The findings are less clear-cut for stock markets than for banks. With this in mind, one of the controversies between economists is over how to best measure financial development and over the direction of causation between growth and financial development (Eschenback, 2004; Abdurohman, 2003).

Economists have employed various proxies to address this practicability problem. McKinnon (1973) and Shaw (1973), for example, used real interest rate as a measure of the level of financial development. Both claim that a low real interest rate below a competitive level is an index for financial sector repression responsible for economic downturn (Fry, 1993). They used a relatively high positive real interest rate to represent a relatively developed financial system and argued that it was a significant positive regressor of economic growth by raising saving, financial intermediation and hence the

supply of credit for productive use (Abdurohman, 2003). However, the contribution of high real interest rate on the broader spectrum of empirical studies remains an ambiguous one.

Goldsmith (1969) pioneered the cross-country growth study to examine the finance-growth link and causality by using data that range over 1860-1963 for 35 countries. He used the ratio of the value of financial intermediary assets to GDP to proxy financial development. He reported a rough positive correlation between the financial intermediary size and economic development without establishing causality. Of the recent times of cross-country studies is the work of King and Levine (1993). They mobilized data ranging over 1960-1989 for 77 countries. They used three growth indicators: real per capita growth, real capital per capita growth and total factor productivity growth - the Solow residual. As for financial development, they developed the following measures: the ratio of liquid liabilities of the financial system to GDP (DEPTH) which measures the size of financial intermediaries, the ratio of bank credit to bank credit plus central bank domestic assets (BANK) which measures the degree to which the central bank versus commercial banks are allocating credit, and the ratio of credit to private enterprises to GDP. They found a strong positive correlation between each of the growth indicators and those of financial development. For example, a rise in DEPTH from the mean of the slowest growing quantile (0.2) to the mean of the fastest growing quantile (0.6) of countries led to per capita growth rate by 1% per year. It also eliminated 20% of the growth gap between the slowest growing and the fastest growing quantile of countries. With regard to the direction of causation, they studied to find out whether the value of financial development predicted the three growth indicators over the next 30 years. They reported that DEPTH in 1960 was a good predictor of subsequent rates of the growth indicators.

Fritz (1984) used the Philippines to examine the causality using data covering 1969-1981. His findings are in support of Patrick that in the initial stage of the development process, causality runs from finance to growth (supply leading hypothesis) while in later (affluent) stage of development, the opposite direction takes shape (demand-following hypothesis).

Furthermore, Odekon (1996) studied 71 developing countries to identify the direction of causation using data over 1960s and 1980s. His findings strongly support the supply-leading hypothesis. He provided the following conclusions: first, financial intermediation promotes economic growth in roughly 85% of the countries; second, financial intermediation plays an equally important role in enhancing growth as other factors like export expansion, capital formation ratio and is more important than the labor growth in this context; third, financial intermediation promotes growth primarily in low-income LDCs; and more importantly, he finds that growth-promoting patterns of financial intermediation are practically invariant across various countries and regions.

In contrast, there are studies that show either weak or bi-directional causality. Demetriades and Hussein (1996) studied 16 less developed countries using time series data. Their findings provided little support for the finance-leads-to-growth hypothesis; rather there was more evidence for the opposite direction and for bi-directional causality. For instance, Korea and Thailand - the two countries with successful financial reform - provided bi-directional causation. They concluded that causality patterns varied across countries and stressed the need for case studies and careful time-series analysis.

As for the stock markets, numerous studies to establish their effect on growth have been conducted. Levine and Zervos (1998) used data over 1976-1993 for 47 countries to measure the impact of stock market activity on growth, capital accumulation, productivity improvements, and savings. They found a robust correlation between stock market liquidity (measured by initial value traded scaled by GDP) and initial turn over ratio (measured by the ratio of total value of shares traded to the value of shares listed on stock exchanges), and current and future rates of GDP growth, capital accumulation, and productivity growth. Other variables such as stock market size (the ratio of market capitalization to GDP), volatility, and integration in the world capital markets are not robustly linked with growth. Besides, the simultaneous inclusion of stock market liquidity and banking development (proxied by the ratio of bank loans to private sector to GDP) in a regression resulted in significant results for both, leading the authors to

interpret it as an indication that banks and stock markets give different services to the economy (Ray, 2004; Eschenbach, 2004).

There are also country case studies. Jayaratne and Strahan (1996) studied the impact of the US states who relaxed the barriers on intrastate branching for banks relative to those who abstained from. Since the early 1970s, 35 states eased the impediments. They found that branch reform raised real per capita growth rates by enhancing the quality of bank loans, and the efficiency of capital allocation. McKinnon (1973) too assessed the link between financial system and economic development in Argentina, Brazil, Chile, Germany, Korea, Indonesia, and Taiwan. He reported critical interactions among financial intermediaries, financial markets, government policies, and industrialization financing (Ray, 2004).

Chapter III
Financial Reforms and Financial Development in Ethiopia

As stepping stones to better understand the ballpark of the after-effects of the financial reform, I first brief the historical perspective of the country's financial sector.

3.1. **A Brief History of Banking in Ethiopia**.

Ethiopia is the owner of huge historical assets. The provenance of the use of modern money in Ethiopia can go as far as more than 2000 years back (Pankrust, 1968 recited in Geda, 2006). The 1000 BC - AD 975 of the Axumite era of the country provided an epoch of money use development. Likewise, the introduction of modern bank in the country is the oldest in Africa. It began with the founding of the Bank of Abyssinia in 1905 which was owned and managed by the British owned National Bank of Egypt. This bank was authorized to issue notes and coins, and was responsible for commercial bank activities. In 1908 new development bank known as Societe National d'Ethiope Pour le Development de l'Agriculture et du Commerce and two other foreign banks Banque de l'Indochine and the Compaignie de l'Afrique Orientale were also established (Pankhrust; 1968 recited in Geda, 2006). In 1931 the Ethiopian government bought the dominant bank during the time, the Bank of Abyssinia, and renamed it the Bank of Ethiopia. This bank is the first entirely African owned in Africa. Yet, it stopped functioning after the Italian invasion. During the Italian invasion of 1936-41, several Italian Banks established branches and expanded banking activities in the country (Geda, 2006; Mulugeta, 1998).

Following the dislodging of Italia, the State Bank of Ethiopia was formed in 1943 by the Ethiopian government. It operated as the central bank and the main commercial bank in the country before it was remodeled in 1963 in to two entities: the National Bank of Ethiopia (NBE) and the Commercial Bank of Ethiopia (CBE). Also, the government created two state-owned development banks: the Agricultural and Industrial Development Bank (AIDB) in 1970 whose task was to grant short, medium and long term loans to the agricultural and industrial sectors, and the Housing and Savings Bank (HSB) to facilitate long term credit for building and housing in 1975. The 1963 banking

law also allowed other home-owned and foreign banks given that they were 51% owned by nationals. The largest of these was the Addis Ababa Bank which was 40% owned by a British-owned Grindlays Bank and had 26 branches by 1975.

The 1974 revolution ushered in an era of radical switch in economic policy. The new military government known as DERG of socialist ideology on 1 January, 1975 put all privately owned financial institutions including three commercial banks, 13 insurance companies, and two non-bank financial intermediaries under state ownership. The National Bank continued to operate as a central bank and all commercial banks were reshaped to create the Commercial Bank of Ethiopia as the only supplier of commercial banking services. Two specialized banks (AIDB and HSB),[8] one insurance company (Ethiopian Insurance Company), and the Pension and Social Security Authority (PSSA) also emerged from the overhaul.

The following metaphors of a classically repressed financial system were common: unitary state-owned institutions (private institutions were disallowed), administrated interest rates, credit control and rationing. NBE fixed interest rates, employed pre-set annual guidelines (which were immune from massaging through out the fiscal year irrespective of economic development) to allocate credit and foreign exchange. The guidelines were in line with the command economy where the public sector commands the lion's share and the financial institutions are mainly to serve the credit demand of the central government and the public enterprises. Discriminatory approach against the private sector and preferential treatment among economic sectors was pursued. For example, the lending rates ranged between 9% and 10.5% until June 30, 1986 with out discriminatory rates between the private and public sectors. On the other hand, saving and time deposit rates were set at 6%. The second interest rate structure, effective as of July 1, 1986, fixed the lending rates for public enterprises who engaged in agriculture at 6% and industry at 8% and for private enterprises at 8% and 9% correspondingly. Savings interest rates for deposits over Birr 100 000 was set at 2%. In a nut shell, the

[8] After the reform the AIDB and HSB were reshaped to be universal banks and renamed respectively as the Development Bank of Ethiopia (DBE) and as the Construction and Business Bank (CBB). Moreover,

second structure favored the cooperatives and the public enterprises (Geda, 2006; Mulugeta, 1998).

The banking system, high level of regs, absence of alternative security markets were the features of the financial markets. The central government and the public enterprises heavily depended on loans from CBE, AIDB and HSB. These loans were, however, facilitated with out taking account of the financial viability of the borrowers causing the banking system, mainly AIDB, to hoard huge amount of non-performing loans. To elucidate, about 71% of them, including three from the financial sector, had an equity-debt ratio of less than 1.5 implying insolvency problem. All in all, for the resource constrained regime, its expansionary fiscal policy translated into public sector deficit excluding grants of 10% of GDP at the end of 1991/1992, and about 56% of it was financed via bank borrowing. These events led to a monetary overhang responsible for the inflation pressure to reach about 21%, the highest in the history of the country (Mulugeta, 1998).

3.2 **Financial Reforms and Financial Development**

With the military government gone in 1991, the country embarked on structural permutations in a bid to cut the Gordian knot. Financial reforms in Ethiopia were synchronized with the whole liberalizing process after the regime change. The early 1990s marked the departure away from the command economic affairs to the introduction of the invisible hands to facilitate economic growth – the main bugaboo. The financial reform of the country is attributed by gradualism and by domestic capacity building before full liberalization. Below are the main reforms introduced in the financial sector (Geda, 2006; Mulugeta, 1998; Abdi, 2000; National Bank of Ethiopia (NBE) Annual Reports):

- Proclamation (no.84/94) allowed the entry of private banks and insurances in the financial sector. This proclamation restricted the participation to the domestic investors (i.e. Ethiopian nationals).

- Proclamation (no.86/94) let the remodeling of the state-owned banks. It also redefined the role of the National Bank of Ethiopia (NBE) to have greater authority in forming and executing monetary policies, and in prudential regulation and supervision to facilitate the financial system.
- Proclamation (no.40/96) allowed for the licensing and supervision of microfinance institutions.
- In September 1997, the legal framework and instruments for bank foreclosure on the collateral on non-performing loans was released.
- In January 1998, the NBE introduced a directive (no. NBE/INT/7/98) to relax the commercial banks' deposit and lending rates except that the floor on deposit rate was set at 6% until it was further minimized to 3% in 2002. This decontrol of the rates was preceded by some measures: in 1992, the discriminatory rates between the private and public sectors was abolished while maintaining differential treatment among different sectors until it was revoked in 1994.
- In September 1998, the NBE introduced directives (no.IBM/01/98 and IBM/02/98) to establish interbank foreign exchange and money markets. It set guidelines and specifications like the minimum amount to be traded between financial institutions, date of transactions, nature of collateral and code of conduct on how these markets should operate. The NBE uses these as extra tools to regulate the financial sector.
- The NBE introduced the directive that requires for a minimum capital requirement of Birr 75 million.

Following these reforms, private commercial banks and insurance companies entered into the market. The number of private banks and insurance companies reached seven and eight respectively during 2006. Tables 3.1 and 3.2 show the number of branches, capital of private commercial banks and insurance companies in conjunction with their public sector counterparts.

During the pre-reform period of 1974-91, since private participation was not allowed, the state-owned commercial banks and the state-owned insurance company covered 100% of

the branch network and capital with the CBE with the lion's share. During the post-reform period, the number and share of private banks and insurance companies, in line with gradualism property of the reform process in the market, has been increasing.

Table 3.1: Capital and Branch Network of Private Banks and Public Banks

Private Banks	No. of branches (2006)	Capital in millions of Birr (2006)	Public Banks	No. of branches (2006)	Capital In mill. Of Birr (2006)
1. Awash International Bank (L in 1994).	36	304.3	1.Commercial Bank of Ethiopia	177	1505.3
2. Dashen Bank S.C.(L in 1995).	37	311.1	2.Construction And Business Bank	27	179.0
3. Bank of Abyssinia (L. in 1996).	26	406.8	3.Development Bank of Ethiopia	32	1822.0
4. Wegagen Bank (L. in 1997).	33	256.8			
5. United Bank S.C. (L. in 1998).	22	193.2			
6. Nib International (L.in 1999).	20	313.4			
7. Cooperative Bank of Oromia (L.in 2004-05).	11	122.7			
Total	185	1908.3		236	3506.3
Share (%)	43.9	35.2		56.1	64.8

Source: National Bank of Ethiopia, Annual Report, 2005/06 and Geda, 2006.
Note: L stands for licensed.

As it can be discerned from table 3.1, since the reform, the share of private commercial banks in branch network and capital has reached 185 (43.9%) and Birr 1908.3 million (35.2%) respectively of the total. Considering the age of the reform and the shallowness of the financial sector, it is commendable. Yet, CBE, the state-owned bank, on individual level commands the largest branch coverage of about 42% (177) of total branch networking, and both DBE and CBE cover about 33.6% and 27.8% of the total capital

respectively. This is evidence to the dominance by the public banks of the banking system.

Table 3.2: Capital and Branch Network of Private Insurance Companies

Private Insurance Companies	No. of Branches (2006)	Capital In Thousand Birr (2006)
1. Awash Ins. Com.S.C. (L. in 1994).	15	39740.0
2. Africa Ins. Com.S.C. (L.in 1994).	9	52035.0
3. National Ins.Co. of Eth. (L. in 1994).	12	9953.0
4. United Ins. Com. S.C (L. in 1994).	17	47169.0
5. Global Ins. Com. S.C. (L.in 19 97).	5	16624.0
6. Nile Ins. Com. S.C. (L.in 1995).	18	55666.0
7. Nyala Ins. Com. S.C. (L. in 1995).	15	55163.0
8. Nib Ins. Com. S.C. (L. in 2002/02).	13	26869.0
Total	104	303219
Share (%)	75.4	60.7

For comparison, the Ethiopian Insurance Company (EIC) - the only state-owned – has 34 branches with Birr 196 677 thousand capital.

Source: National Bank of Ethiopia, Annual Report, 2005/06 and Geda, 2006.

As for the insurance industry, the picture of private participation is remarkable relative to the state-owned EIC. The share of private companies in branch network and capital stood at 75% (104) and 60.7% of the total. Despite that, on individual level, EIC remained leading. More over, microfinance institutions, new faces in the country whose targets are small farmers and small scale investors, numbered 26 with total capital of Birr 794.6 million and total assets of Birr 794.6 million. They have been playing a big role in fulfilling financial functions among small scale investments since their inception. The

distributional spread of the financial institutions is skewed to the political and economic center of the country - Addis Ababa. Of the total, Addis Ababa attracted 148 bank branches, 66 insurance branches and 11 microfinance institutions (NBE, Annual Report, 2005/06).

To better determine the ramification of the reform, I use some measures of monetary and credit aggregates: Net demand deposit (DD), narrow money supply (M1), quasi-money, total deposits, broad money supply (M2), claims on non-central government (CNCG), claims on central government (CCG), and grand gross domestic credit (GDC). I also included the real deposit interest rate. For analogy, I bisected the measures into pre-reform and post-reform periods.

The results reflect tremendous progress after the reform in all aggregate measures as shown by table 3.3. The post-reform average values of DD, M1, Quasi money, total deposits, M2, CNCG, CCG and GDC surged by 367%, 306%, 719%, 525%, 416%, 376%, 359% and 366% respectively from their counterparts in pre-reform period; the post-reform share of these same aggregate measures are also 85%, 84%,, 91%, 89%, 87%, 86%, 85% and 85% respectively out of the entire period. It should be, nevertheless, noted that the periods are not of equal size. Tables 3.3 and 3.4 summarize this.

One of particular interest is the relation between the real deposit interest rate and deposits. Figure 3.1 displays that deposits increased steadily in all periods both before and after reforms while real deposit rate zigzagged its course with negative values in some periods. This stands in contrast to the volume effect hypothesis of financial liberalization. This indicates that there are other factors like the opening up of formal institutions, income growth, knowledge gap, income distribution which contribute to the steady growth. One implication of this result may be that low real interest rate is secondary to other factors like growth. In fact, low real interest rate may lead to higher deposits given perfect environment. If lower real interest rates ramp up production, the growth of income leads to higher level of deposits. In other words, the growth effect on deposits of low real interest rates outweighs its negative pure intermediation effect. The

only possibility that this may not work is if people stick to cash holdings for whatever reasons following low (negative) real deposit rates.

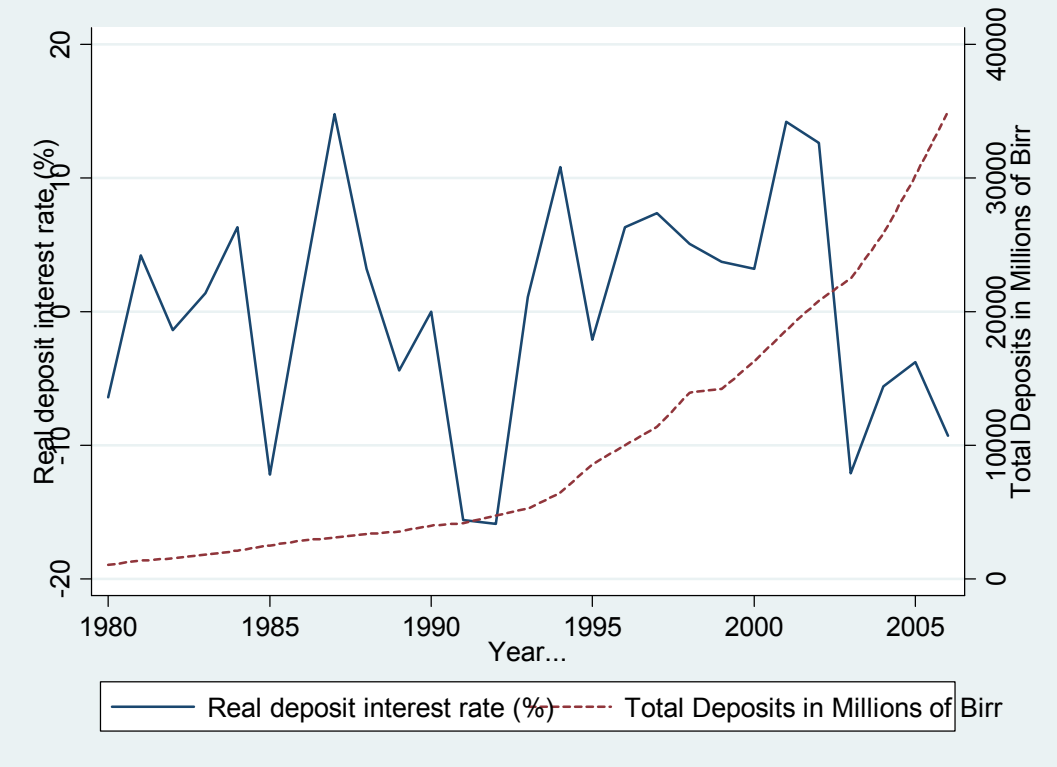
Table 3.3: Aggregate Monetary and Credit Measures of Pre-reform Period (In Millions of Birr).

Year	DD (1)	Money supply (M1) (2)	Quasi money (3)	Total deposits (4=1+3)	Broad Money (M2) (5=2+3)	Real deposit interest rate (6)	CNCG (7)	Claims on central government(CCG) (8)	GDC (9=7+8)
1980	435.8	1498.6	610.2	1046.0	2108.8	-6.4	1461.7	1176.6	2638.3
1981	688.2	1715.3	662.3	1350.5	2377.6	4.2	1520.6	1388.1	2908.7
1982	762.4	1892.2	751.5	1513.9	2643.7	-1.4	1730.6	1394.6	3125.2
1983	922.2	2180.4	860.1	1782.3	3040.5	1.4	1569.5	2322.2	3891.7
1984	1096.4	2379.3	1004.4	2100.8	3383.7	6.3	1798.4	2558.3	4356.7
1985	1333.6	2692.1	1156.9	2490.5	3849.0	-12.2	1855.7	2961.2	4816.9
1986	1587.7	3179.6	1268.6	2856.3	4448.2	1.4	2061.5	3314.1	5375.6
1987	1820.0	3563.5	1245.2	3065.2	4808.7	14.8	2346.4	3716.7	6063.1
1988	2002.5	3910.8	1327.9	3330.4	5238.7	3.2	2790.3	4007.8	6798.1
1989	1992.0	4173.8	1530.6	3522.6	5704.4	-4.4	2902.1	4452.7	7354.8
1990	2253.7	4990.0	1718.2	3971.9	6708.2	0.01	2927.5	5670.9	8598.4
1991	2314.0	6134.8	1827.4	4141.4	7962.2	-15.6	3231.7	6917.8	10149.5
Grand total (1980-91)	17208.5	38310.4	13963.3	31171.80	52273.70	-8.69	26192	39881	66077
Average value (1980-91)	1434.04	3192.53	1163.61	2597.65	4356.14	-0.72	2183	3323.42	5506.42
Share (1980-2006)	0.15	0.16	0.09	0.11	0.13		0.14	0.15	0.15

Source: National Bank of Ethiopia, Annual Report, 2005/06.

The other measure to give some notice to is CCG which increased after the reform. This shows that the central government has an active part in borrowing. An active participation by a government in borrowing is commonly seen as obstacle to financial

Figure 3.1: The Course of Real Deposit Interest Rate and Total Deposits.



Source: National Bank of Ethiopia, Annual Reports.

development. It is considered to lead to wasteful and inefficient resource allocation on account of rent-seeking activities by public officials and its crowding out effect on private participation. But, in a country where private sector is callow and infrastructural facilities are critically low, the role of a government is necessary in setting up the pillars. Therefore, an increase in CCG in Ethiopia should not mean negative development in financial sector since its role in development efforts has been meaningful. For example, National Bank of Ethiopia, Annual Report, 2005/2006 showed that capital expenditure reached Birr 14 billion in 2005/06 with the performance rate of capital expenditure standing at 74%.

The aggregate measures are not, however, adequate indicators of financial development. For them to be more reliable and elucidative, they have to be supported by the analysis of the measures of financial deepening. I use some of the commonly used measures with regard to this: the ratio of narrow money to GDP (M1/GDP) which is used to measure

the degree of monetization, the ratio of broad money to GDP (M2/GDP) and the ratio of domestic credit to GDP (GDC/GDP). These two indicate the level of intermediation in the economy. The ratio of claims on central government to total credit (CCG/GDC) is also considered..

Table 3.4: Aggregate Monetary and Credit Measures of Post-reform Period (In Millions of Birr)

Year	DD (1)	Money supply (M1) (2)	Quasi money (3)	Total deposits (4=1+3)	Broad Money (M2) (5=2+3)	Real deposit interest rate (6)	CNCG (7)	Claims on central government(CCG) (8)	GDC (9=7+8)
1992	2529.5	6845.3	2165.6	4695.1	9010.9	-15.9	3416.7	8062.8	11479.5
1993	2697.5	7580.7	2556.0	5253.5	10136.7	1.1	2505.6	10401.5	12907.1
1994	3214.5	8373.2	3225.5	6440	11598.7	10.8	3173.1	11400.2	14573.3
1995	4088.6	9922.4	4486.0	8574.6	14408.4	-2.1	5516.8	11324.0	16840.8
1996	4260.5	9917.4	5737.5	9998	15654.9	6.32	7808.3	11575.7	19384.0
1997	4847.5	10024.0	6524.8	11372.3	16548.8	7.36	8827.6	10975.8	19803.4
1998	6377.2	11094.0	7549.3	13926.5	18643.3	5.1	10018.4	12032.4	22050.8
1999	6182.5	11378.9	8020.5	14203	19399.4	3.75	10888.9	13053.8	23942.7
2000	7136.0	13050.3	9127.5	16263.5	22177.8	3.2	11860.3	19423.4	31283.7
2001	7834.0	13745.8	10770.4	18604.4	24516.2	14.21	12677.7	21357.4	34035.1
2002	8690.6	14152.5	12139.5	20830.1	26292.1	12.66	12113.9	15985.1	28099.0
2003	8834.8	15416.8	13643.4	22478.2	29060.2	-12.1	11459.7	17229.8	28689.4
2004	10192.1	18036.0	15590.0	25782.1	33626.0	-5.6	12453.8	19199.2	31653.0
2005	11265.1	21291.1	18920.7	30185.8	40211.7	-3.8	19199.7	21673.8	40873.5
2006	12389.0	23811.9	22565.5	34954.5	46377.4	-9.3	24029.6	25266.4	49295.9
Grand total(1992-2006)	100539.4	194640.30	143022.20	243561.60	337662.50	15.68	155950.1	228961.3	384911.40
Average value (1992-2006)	6702.63	12976.02	9534.81	16237.44	22510.83	1.05	10396.67	15264.09	25660.76
Share (1992-2006)	0.85	0.84	0.91	0.89	0.87		0.86	0.85	0.85

Source: National Bank of Ethiopia, Annual Report, 2005/06.

An increase in M1/GDP, M2/GDP, GDC/GDP reflect financial development (deepening). The findings show modest increment in view of the immense changes in aggregate measures as indicated above. Table 3.5 summarizes this.

Table 3.5: Financial Deepening Indicators

Pre-reform period					
Year	M2/GDP	GDC/GDP	CCG/GDC	GDC/M2	M1/GDP
1980	0.25	0.32	0.45	1.25	0.18
1981	0.23	0.29	0.48	1.22	0.17
1982	0.24	0.29	0.45	1.18	0.18
1983	0.25	0.33	0.60	1.28	0.19
1984	0.31	0.40	0.59	1.29	0.22
1985	0.29	0.40	0.61	1.25	0.21
1986	0.33	0.40	0.62	1.21	0.24
1987	0.34	0.42	0.61	1.26	0.26
1988	0.35	0.45	0.59	1.30	0.26
1989	0.36	0.47	0.61	1.29	0.26
1990	0.39	0.51	0.66	1.28	0.30
1991	0.40	0.51	0.68	1.27	0.31
average	0.31	0.40	0.58	1.26	0.23
Post.-reform Period					
1992	0.43	0.56	0.70	1.27	0.34
1993	0.38	0.50	0.81	1.27	0.30
1994	0.41	0.51	0.78	1.26	0.30
1995	0.42	0.50	0.67	1.17	0.29
1996	0.41	0.51	0.60	1.24	0.26
1997	0.40	0.48	0.55	1.20	0.24
1998	0.41	0.49	0.55	1.18	0.25
1999	0.40	0.49	0.55	1.23	0.23
2000	0.41	0.58	0.62	1.41	0.24
2001	0.46	0.64	0.63	1.39	0.26
2002	0.53	0.57	0.57	1.07	0.29
2003	0.42	0.41	0.60	0.98	0.22
2004	0.40	0.38	0.61	0.94	0.21
2005	0.42	0.43	0.53	1.02	0.22
2006	0.41	0.44	0.51	1.06	0.21
Average	0.42	0.50	0.62	1.18	0.28

Source: Author's computed values based on the National Bank of Ethiopia, Annual Reports.

The average values of M1/GDP, M2/GDP, GDC/GDP and CCG/GDC grew correspondingly by 21%, 35%, 25%, and 6% after the reform. This shows that the level of monetization and intermediation is improving. It also implies that in the post-reform period nominal GDP grew by about threefold relative to the pre-reform period. Meanwhile, the average value of velocity of money (GDP/M2) declined from 3.23 to 2.38 implying liquidity constraints during the pre-reform period. In addition, I included the ratio of total credit to broad money (GDC/M2). In almost all years, lending activities exceed mobilization. Yet its average value declined from pre-reform 1.26 to post-reform 1.18. This may implicate in relative terms that resource mobilization activities are improving.

3.3 **Performance of Public and Private Banks.**

In this section, I evaluate the performance of both types of banks in resource mobilization, loan disbursement and collection. Table 3.6 facilitates the comparison. As it can be seen from the table, the share of public banks has been declining from year to year in all indicators. For example total deposits of the public banks fell from 95.8 % to 70.6% while that of the private banks rose from 4.2% to 29.4% from 1997 to 2006. The public banks disbursed about 93.2% of the total in 1997 falling to 41.3% in 2006 which means that the share of the private banks rose from 6.8% to 58.7%. Outstanding loans of the public banks decreased from 96.4% in 1997 to 71.1% in 2006 with the remaining corresponding shares go to the private ones. All in all, the performance of the private banks has been improving and the trend implies their growing profitability and competitiveness. But, this shouldn't conceal the fact that the public banks together cover the largest part. The public banks still command on average more than 50% in mobilization, loan disbursement, loan collection and outstanding loans over the period. This implies that private participation, albeit improving, is at young stage.

Table 3.6: Share of Mobilization, Loan Disbursement, Loan Collection and Outstanding Loans (%)

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Public banks										
Demand Deposits	97.2	96.9	95.1	94.6	93.6	91.2	89.5	83.0	86.2	83.6
Saving deposits	94.1	90.7	87.7	83.7	79.6	76.5	72.6	35.0	64.5	61.0
Time deposits	95.2	94.5	89.7	84.4	80.2	73.5	66.8	-64.7	55.8	41.5
Total deposits	95.8	94.4	91.7	89.4	86.7	83.4	80.4	62.8	74.7	70.6
Loans Disbursed	93.2	81.9	77.6	70.9	62.8	53.9	43.7	43.1	50.6	41.3
Loan Collected	94.0	83.1	81.0	77.1	74.5	67.9	59.6	50.8	51.2	50.5
Outstanding loans	96.4	95.1	92.7	89.3	89.6	87.0	82.4	79.9	73.8	71.7
Private Banks										
Demand Deposits	2.8	3.1	4.9	5.4	6.4	8.8	10.5	17.0	13.8	16.4
Saving Deposits	5.9	9.3	12.3	16.3	20.4	23.5	27.4	65.0	35.5	39.0
Time deposits	4.8	5.5	10.3	15.6	19.8	26.5	33.2	165.0	44.2	58.5
Total Deposits	4.2	5.6	8.3	10.6	13.3	16.6	19.6	37.2	25.3	29.4
Loan disbursed	6.8	18.1	22.4	29.1	37.2	46.1	56.3	66.9	49.4	58.7
Loan collected	6.0	16.9	19.0	22.9	25.5	32.1	40.4	49.2	48.8	49.5
Outstanding loans	3.6	4.9	7.3	10.7	10.4	13.0	17.6	20.1	26.2	28.3

Note: The values for 2004 are net values.

Source: National Bank of Ethiopia, Annual Report and Geda, 2006.

Chapter IV
Data and methodology

Much of the empirical inquiry into finance-growth link has depended on cross sectional data across countries. This may be due to the scarcity of time series data over a very long period of time. This study is a country-case study and makes use of time series data to measure the quantitative growth effect of financial development. To fulfill this, I employ the multivariate regression model.

Model Specification

Many model specifications can be considered to measure the quantitative relation between finance and growth. This study builds on the specification model of Rame (1999) which was a slightly modified growth model of Odedokum (1996). In this model, the level of financial development is plugged as input into the aggregate production function. This is meant to show that financial development provides real services to the economy. By doing so, financial development is rendered a broader spectrum and a real variable status in the model. This helps us to establish the non-neutrality of financial development with the economy. The model is derived from a general production framework as follows:

$$Y_t = f(L_t, K_t, X_t, F_t) \qquad (1)$$

.

Where Y, L, K, F stand for total real output, labor input, capital stock, total export and level of financial development respectively. Taking the total derivative of equation 1, we get,

$$\frac{dY}{Y} = f_L dL + f_K dK + f_X dX + f_F dF$$

$$\frac{dY}{Y} = \left(f_L \frac{L}{Y}\right)\frac{dL}{L} + \left(f_K \frac{K}{Y}\right)\frac{dK}{K} + \left(f_X \frac{X}{Y}\right)\frac{dX}{X} + \left(f_F \frac{F}{Y}\right)\frac{dF}{F}$$

$$\frac{dY}{Y} = \varepsilon_{Y,L}\frac{dL}{L} + \varepsilon_{Y,K}\frac{dK}{K} + \varepsilon_{Y,X}\frac{dX}{X} + \varepsilon_{Y,F}\frac{dF}{F} \qquad (2)$$

Where $\varepsilon_{Y,L}$ is output elasticity of labor and the rest follow suit. $\frac{dY}{y}, \frac{dL}{L}, \frac{dK}{K}, \frac{dX}{X}$, and $\frac{dF}{F}$ are growth rates of output, labor, physical capital stock and financial factors respectively.

By representing the output elasticities of labor, capital, export, and financial development by $\beta_1, \beta_2, \beta_3, \beta_4$ respectively and including a constant, β_0 and a stochastic component, μ, we get the following stochastic form of equation 2:

$$\frac{dY}{Y} = \beta_0 + \beta_1(\frac{dL}{L}) + \beta_2(\frac{dK}{K}) + \beta_3(\frac{dX}{X}) + \beta_4(\frac{dF}{F}) + \mu \qquad (3)$$

Since we can't directly measure growth rates of capital stock and financial factors, we have to find proxies to represent them. The amount of investment (i.e. gross fixed capital formation) is used to measure dK. This changes the coefficient of capital, β_2, from elasticity measure to marginal productivity. As for financial development, I use two alternative proxies – the ratio of broad money to GDP and the ratio of total credit to GDP. This helps to get robust results. The other modification I make is to include trend variable in the model to capture the impact on growth of omitted factors over time. Therefore, the final form of equation 3 becomes:

$$GY = \beta_0 + \beta_1(GL) + \beta_2(I/Y) + \beta_3(GX) + \beta_4(COG) + \beta_5(DEPTH) + \beta_6 t + \mu \qquad (4)$$

Where

GY = Real GDP growth rate,

GL = Labor growth,

I/Y = The ratio of gross fixed capital formation to GDP as a proxy for capital growth,

GX = Export growth,

COG = Ratio of total credit to GDP,

DEPTH = Ratio of broad money to GDP, and

t = trend.

In this analysis, of particular interest are the signs and sizes of the coefficients of COG and DEPTH. They reveal the direction and magnitude of the growth effect of financial development. We expect all the explanatory variables to have positive effect on GDP growth.

Justification of the Model Specification and Financial Variables Selection

In economic literatures, there are studies conducted at firm level, industrial level, and at the country level in different countries. I decide to conduct the study at the country level for the following reason: the country in question is a developing one who has recently emerged to wage an all-out onslaught against years of economic doldrums and disenfranchisement. In fact, the agriculture sector, the mainstay of the country, has been granted a lead role in the process. So to choose a single sector for that matter industry or firm will yield a minimal and may be a skewed picture of the influence of financial factors.

As indicated in chapter II, one of the controversies in empirical world is how to best measure financial development (deepening) in a country. To address this problem, several measures have been constructed to proxy the level of financial development. Of these proxies are the ratio of liquid liabilities of the financial system to GDP, ratio of bank credit to bank credit plus central bank credit, the ratio of credit to private sector to total credit, the ratio of credit to private sector to GDP, turnover ratio, the ratio of total credit to GDP, interest rate spread and so on. The selection of the representatives depends on the conditions on the ground.

I select both the ratio of broad money to GDP (DEPTH) and the ratio of total credit to GDP (COG). Reason: the choice of DEPTH has been a standard way to measure financial depth. It is the robust measure of the financial intermediation in the economy. An increase in DEPTH is seen as an improvement in financial deepening in the economy. As

for COG, understand that the country is essentially a credit-based society where capital market is almost non-existent. In a credit-based society, productive economic units rely mainly on borrowing to finance their activities. The inclusion of credit in the model helps us to understand how much growth is credit-driven. Besides, I take the total credit rather than credit only to the private sector since both the public and the private sectors have active role in the country's development endeavors. The public sector has been active in setting up the pillars such as social and economic infrastructures of the economy. So it is very plausible to include total domestic credit.

Because time series data are used, I conduct the Augmented Dickey Fuller (ADF) test to know the stationarity of the variables. After establishing stationarity of the variables, I use the OLS estimation method to equation 4 to measure the effect of financial development on growth. This study doesn't go beyond that.

Brief Note on Stationarity and the Augmented Dickey Fuller (ADF) Test

The property of series variables to be stationary or nonstationary is fundamental to reach correct statistical inference about the relation between variables. For OLS estimation to be valid, variables have to be stationary. A series is stationary if its stochastic properties (i.e. its mean, variance, and its covariance between its different values) are time-invariant. In other words, if these properties vary with time, then a variable is a nonstationary series. A nonstationary series invalidates the standard statistical tests due to the absence of a specified variance. This implies that running regression on nonstationary data can lead people to erroneously conclude that a meaningful relation exists among the regression variables because of misleading (or spurious) values of R^2, DW, and t statistics.

To avoid this, the ADF test is used to test the stationarity of variables. The test is conducted by estimating the following regression equation:

$$\Delta Y_t = \beta_0 + \beta_1 t + \beta_2 Y_{t-1} + U_t$$

Where Δ the difference operator, t is is the trend variable, and U is the white noise residual. Y stands for the variables to be tested. In this study, it represents GY, GL, I/Y,

GX, COG and DEPTH. The hypothesis testing of (non)stationarity of the variables is done in the following way:

$H_0 : \beta_2 = 0$
$H_1 : \beta_2 \prec 0$

Rejecting the null hypothesis (H_0) shows that the variable is stationary or integrated of order zero, written as I(0). If the null is accepted, the series is unit-root (nonstationary) and has to be differenced before it is used in the regression. A variable which must be differenced once to be stationary is integrated of order one, I(1). In general, a variable is called integrated of order d, denoted by I(d), if it must be differenced d times to make it stationary (Kennedy, 2003).

Data Sources

The data are collected from secondary sources. They are taken from NationMaster database, World Bank Report, annual reports of the National Bank of Ethiopia, and information bulletins and others. The data span over 1980-2006.

Chapter V
Results and Discussions

In this analysis, as a first step, the ADF test is employed to levels and first difference to establish the order of integration of the variables in the model. The test is conducted with the option of intercept, and trend and intercept without lags. The results of ADF unit-root test is reported in tables 5.1 and 5.2.

Table 5.1: ADF Unit Root Test Results with Intercept

Series		Level	First Difference	Conclusion
GY		-4.338**	--	I(0)
GL		-5.727**	--	I(0)
GX		-3.359*	--	I(0)
I/Y		-3.146*		I(0)
COG		-1.913	-3.776**	I(1)
DEPTH		-1.845	-5.784**	I(1)
Critical Values	1%	-3.708	-3.72	
	5%	-2.98	-2.985	

Table 5.2: ADF Unit Root Test Results with Constant and Trend

Series		Level	First Difference	Conclusion
GY		-5.108**	--	I(0)
GL		-5.79**	--	I(0)
GX		-3.639*		I(0)
I/Y		-3.166	-6.98**	I(1)
COG		-1.531	-3.833*	I(1)
DEPTH		-2.183	-5.851**	I(1)
Critical Values	1%	-4.355	-4.374	
	5%	-3.594	-3.603	

Source: Author's calculations using GiveWin.

Note: * and ** show levels of significance at 5% and 1% respectively.

The results show that the null hypothesis of unit-root is rejected at levels for GY, GL, GX; I/Y is also stationary with constant but not with trend and constant. The other variables, COG and DEPTH, are unit-root series at levels. However, they are stationary at their first difference. Therefore, we can conclude that GY, GL and GX are I(0) while COG and DEPTH are I(1). I/Y is I(0) with constant but I(1) with trend and constant. In the regression analysis, I include I/Y as I(0) series to help exploit more information.

After establishing the order of integration of the variables, we can now return to the multiple regression analysis. In the analysis, we include the levels of GY, GL, GX and I/Y and the first difference values of unit-root COD and DEPTH according to the ADF test results. Table 5.3 reports the regression results using OLS method.

Table 5.3: Results of Multivariate Model Using OLS Estimation Method: GDP growth (GY) as Dependent Variable.

Explanatory Variables	Coefficients
Constant	-0.11 (-1.01)
Trend	0.004** (1.89)
GL	-3.25*** (-2.92)
I/Y	0.72 (1.26)
GX	0.10 (0.81)
Δ(COG)	0.62* (1.56)
Δ(DEPTH)	0.01 (0.02)
$R^2 = 0.49$	F-statistic=3.167**
DW statistic=1.97	n=27

Source: Author's calculations using GiveWin.

Note: The values in parenthesis are t-statistics. *, ** and *** show the levels of significance at 10%, 5% and 1% respectively.

The results in Table 5.3 signals mixed message about the coefficients of the explanatory variables. While the coefficients of Trend, export growth (GX), the ratio of investment to GDP (I/Y), and measures of financial deepening (COG) and DEPTH) have correct signs as expected, that of labor has unexpected negative sign. Of all explanatory variables, labor growth, credit and trend are statistically significant at 1%, 5% and 10% respectively. The sizes of the coeffients show that a 1% increase in export growth, COG and DEPTH leads to 0.10%, 0.62% and 0.01% rise in GDP growth. In addition, the marginal productivity of capitals is 0.72. On the other hand, a 1% rise in labor growth has led to a 3.25% fall in GDP growth.

The positive sign of Trend shows that there are other omitted factors that have positive contribution to growth overtime. One of these omitted factors might be the political reforms in the country. These political reforms have let various ethnic groups to have active political and economic involvement. The negative sign of labor growth might be due to the dearth of adequate factors that supplement labor force growth and its spill-over repercussion on growth. All in all, we can infer that credit facilities have had a strong positive impact on growth. This result is in line with the amount of credit that has increased over time. The positive, albeit not strong, contribution of DEPTH is too reasonably good considering its size. In chapter III, it is reported that DEPTH has improved after reform; but it has remained relatively shallow. This indicates that as the degree of financial intermediation evolves over time, we can expect a strong positive contribution to the economy.

The fit of the regression result is fairly good as indicated by R^2 and F-statistic. About 49% of the variation in GY is explained by the model. The F-statistic also shows that the coefficients together are statistically significant at 5% level of significance. The computed value of the DW statistic, 1.97, which is above the critical upper limit of the DW statistic is evidence to the fact that the test doesn't suffer from autocorrelation problem. So the use of the OLS technique is justified.

Chapter VI
Conclusion

The link between financial liberalization, financial development and economic growth has been the concern of scholars and policy makers. A lot of theoretical and empirical works have been done to discern the significance of financial reforms to financial development and consequently to growth. There are scholars who argue that financial development is a critical factor in economic growth. In contrast, there are also economists who contend that financial factors are not that important. Of course, the second argument is subsiding on account of the weight of empirical evidence.

The purpose of this paper is to empirically assess this nexus in Ethiopia, a country who has taken reform measures since 1992 in a bid to help the economy take off from years of doldrums. The attributes of the reforms are gradualism and domestic capacity building before full liberalization. Participation in the financial sector is allowed only to Ethiopian nationals.

The paper used time series data that range over 1980-2006. To assess the effect of reforms on financial development, I used some aggregate monetary and credit measures. In addition, I employed some indicators of financial depth to get adequate measure of financial development. In the econometric part where the quantitative growth effect of financial development was undertaken, I applied the OLS estimation method to the multivariate model using GiveWin econometric program. In the multivariate model, the proxy variables for financial depth were included as additional regressors. The ADF test was applied to both the dependent and explanatory variables to establish their .stationarity

The results show that financial reforms have led to financial development. All the aggregate and financial depth indicators rose after the reforms, implying increasing degree of monetization and intermediation in the economy. Also, in line with the gradualism property of the reforms, private sector participation in the financial sector is, albeit sluggish, improving. However, the relation between real deposit interest rate and

total deposits has been found flat. In spite of the swing of real deposit interest rates between positive and negative values, the total amount of deposits steadily increased throughout the study period. This refutes the hypothesis that savings and real interest rate are positively correlated.

The regression results, consistent with expectation, display that the proxy variables (i.e. COG and DEPTH) for financial depth have had positive contribution to growth. More importantly, COG is statistically significant with higher elasticity. A 1% increase in credit led to a 0.62% increase in GDP growth. DEPTH has been found to be statistically insignificant and its elasticity is too minimal. This could be due to the low value of DEPTH. As indicated in chapter III, despite improvement from pre-period figure, the ratio of broad money to GDP remains relatively low. Thus, increased resource mobilization over time may lead to a considerable positive impact on growth.

Over all, the liberalization program has been accompanied by progress in the financial sector which in turn has exerted positive influence to the economy. But, there is a lot of works to do. The financial sector is still dominated by the public financial institutions. This picture has to be reversed. It seems that there is sluggishness towards that. For a country with huge population size, the current financial facilities can't be adequate. The government should promote more domestic private participation by adopting loose gradualism. As for foreign participation, I think that the government should stick to domestic capacity building until domestic private financial firms become sufficiently capable to withstand fierce competition; otherwise, the gains of financial reforms may precipitate. No country can be sustainable without its own actors. In addition, without well-institutionalized body to carry out prudential regulation and supervision, the inrush of foreign firms may cause havoc.

The task of ensuring the soundness and transparency of the financial system will be hard and complicated with the growth of the financial sector. Financial markets are very sensitive and most of the time, are awash with moral hazard and adverse selection. So the government has to ready vibrant institutions that can match a growing financial sector.

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