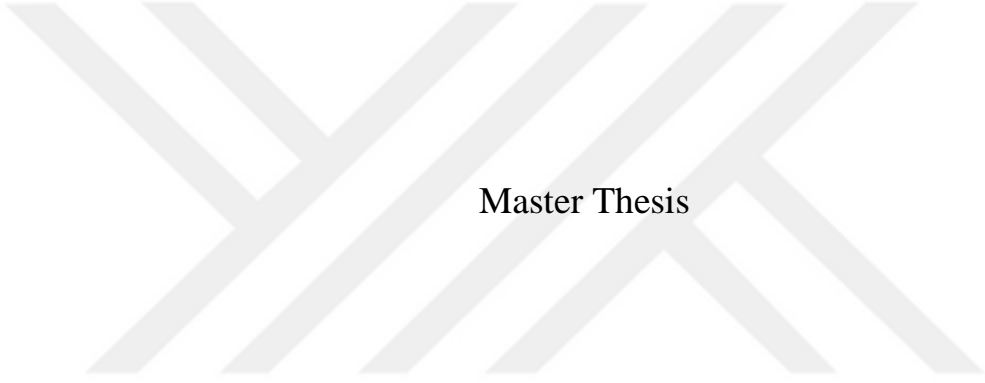**REPUBLIC OF TURKEY**
**ISTANBUL GELISIM UNIVERSITY**
**INSTITUTE OF GRADUATE STUDIES**

Department of Economics and Finance

# THE EFFECT OF FINANCIAL DEVELOPMENT ON THE ECONOMIC GROWTH: THE CASE OF BELARUS

Master Thesis

**ISMAIL HALABI**

Supervisor

Assoc. Prof. Dr. Kemal ERKİŞİ

**Istanbul – 2021**

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**DECLARATION**

I hereby declare that in the preparation of this thesis, scientific ethical rules have been followed, the works of other persons have been referenced in accordance with the scientific norms if used, there is no falsification in the used data, any part of the thesis has not been submitted to this university or any other university as another thesis.

ISMAIL HALABI

…/…/2021

# ABSTRACT

The purpose of this thesis is to investigate the effects of financial intermediation on Belarusian economic growth. Data from the World Bank and Belarusian government statistics were used to create a time series from 2003 to 2018. To study interrelationships between variables in the VAR system, the Vector Auto regression (VAR) technique and Innovation accounting (variance decomposition) analysis are used, which varies from the conventional approach or technique in general.

Financial development is shown to be the second most important determinant (after labor force) in driving economic expansion in Belarus. Financial intermediation has a major impact on economic growth in Belarus, according to the study. A two-way causation exists between financial development and economic growth. This type of research is rare in Belarus, but it represents an important development in the literature on the finance-growth link.

**Key words:** Economic Growth, Financial Development, Financial Intermediation, VAR, Money supply.

# ÖZET

Bu tezin amacı, finansal aracılığın Belarus ekonomik büyümesi üzerindeki etkilerini araştırmaktır. 2003'ten 2018'e kadar bir zaman serisi oluşturmak için Dünya Bankası ve Belarus hükümeti istatistiklerinden elde edilen veriler kullanıldı. VAR sistemindeki değişkenler arasındaki ilişkileri incelemek için Vektör Otomatik regresyon (VAR) tekniği ve İnovasyon muhasebesi (varyans ayrıştırma) analizi kullanıldı, genel olarak geleneksel yaklaşım veya teknikten farklıdır.

Belarus'ta ekonomik genişlemenin itici gücünde (işgücünden sonra) ikinci en önemli belirleyicinin finansal gelişme olduğu gösterilmektedir. Çalışmaya göre, finansal aracılık Belarus'taki ekonomik büyüme üzerinde büyük bir etkiye sahip. Finansal gelişme ile ekonomik büyüme arasında iki yönlü bir nedensellik vardır. Bu tür araştırmalar Belarus'ta nadirdir, ancak finans-büyüme bağlantısına ilişkin literatürde önemli bir gelişmeyi temsil etmektedir.

**Anahtar kelimeler**: Ekonomik Büyüme, Finansal Gelişme, Finansal Aracılık, VAR, Para Arzı

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# INTRODUCTION

Financial development may be described as "factors, policies and organizations that lead to effective financial brokerage markets, Moreover, extensive and extensive access to cash and financial services" (WEF 2011, p. 3). It gives the meaning of total quantitative and a qualitative improvement in doing things related to financial systems, makes developments, achieves the openness in the financial system, helps to mitigate market disadvantages through the financial system and gives information related to real functions of the financial system.

Financial system basically in any economy consists of three main components that are financial markets, financial institutions and financial regulations and laws (Leonardo 2010). According to (Levine 1997), Mobilizing capital, allocating money, organizational governance, facilitating risk management, and allowing the exchange of goods and services are the five essential activities of the economy. Furthermore, if a country's financial system is functioning well, it will have a high availability of financial services. As a result, financial progress must be examined in a larger context. As argued by Cihak et al, (2012), financial development means to provide financial functions in a quality and good level and to ease access information for investments, diversification and facilitating risk, monitoring the investment, mobilizing savings and facilitating the exchange of goods and services in the economy of any country.

The complex characteristics of financial systems means there is a need to various indicators to measure financial development in the country. But, it is not a simple work to choose the indicator(s) that will be the most appropriate to measure financial development and keeps as an unanswered question. The financial development can be measured in four dimensions that are financial depth, access, efficiency and stability.

The relationship between financial development and economic growth is a hot topic of discussion. The various levels of production of financial markets influence economic growth in several ways, as argued by Schumpeter (1934) and backed by King and Levine (1993). As a result, sources in every country range from simply more financial funds available to support government and private sector investment programs to more effective distributing funds in the country sector, resulting in more productive and efficient economic growth  Beck et al., 2000). The primary literature by (Panizza, 2014) assumes a favorable relationship between financial depth (as

calculated, for example, by the volume of domestic credit as a percentage of gross domestic product) and economic growth, but recent analytical work by Arcand et al. (2015) and Sahay et al. (2015) shows a nonlinear (often inverse U-shaped) relationship. The relationship is not so simple and straight forward to describe, and the effect varies from country to country, depending on the country's economic and integration level (Demirgüç-Kunt et al., 2013), as well as the consistency of the financial sector or its framework (Beck et al., 2014), and other factors.

The recent results of non-linearity of relationship between financial development and economic growth refers to an existing of 'too much finance' probably in reach with huge financing of households (Beck et al., 2012). These findings have been derived in a basic way using the aggregate credit information of financial organizations and depending on large sets of countries. some previous research centered on smaller groups of countries that were more comparable, such as members of the Organization for Economic Co-operation and Development (OECD) or a variety of other developed country groups (Samar gandi et al, 2015). The remainder of this thesis is structured in the following manner. The first chapter contains a survey of the literature on financial development. The second part contains a survey of the literature on economic growth. The link between financial development and economic growth is discussed in Chapter 3, and the facts and empirical strategy are discussed in Chapter 4. The results are presented in Chapter 5.

# CHAPTER ONE
# FINANCIAL SYSTEM DEVELOPMENT

A financial system's function is to serve as a middleman between lenders and borrowers, lowering transaction and information costs for all parties. In this chapter we will attempt to provide a summary of a financial system's meaning, configuration, operations, and indicators.

## 1.1. OVERVIEW OF A FINANCIAL SYSTEM

The financial sector takes an important place in any economy because its role in distributing money in efficiently way through channels from savers to prospective borrowers, making it easy more and more for organizations to take what it needs from funds for good prospective investment in new capital and for individuals to take money against their prospective income in the future like taking money for college. Without the markets that give finance and organizations, takers should have to take money directly from savers. In this way not, much borrowing would make in the economy at all, borrowers could suffer and could be not easy for them to find individuals able and wanting to give them money as a loan. Dehejia, R.H. &Gatti, R., (2005) As a result, without much borrowing, the economy of any country will be less developed, as few individuals and institutions would have the ability to raises funds to do investments in new fields like plant and equipment. In other worlds, in comparative few individuals would have the ability to own their own homes, or take a car. So, and as we noticed a well-functioning economy is a result for a well-functioning economy.

### 1.1.1. The Concept of Financial System

Financial institutions, both specialized and non-specialized, regulated and unstructured financial markets, and financial instrument services, all of which are diverse and interrelated, make up the financial system. The financial system's goal is to make it simpler for money to move across a market. It has to deal with money, credit, and finance in some way. Money is both a means of exchange and a means of payment. Credit refers to the whole amount of debt discharged, including interest. And finance refers to the fiscal capital of a state, a company, or an individual, which includes their own cash and obligations (Ram, R. 1999, p. 78).

According to Amit Chaudhary,

"The financial sector is a collection of financial institutions, capital markets, financial instruments, and financial services whose aim is to transfer capital through an economy in order to stimulate growth."

According to Dhanilal,

"Financial system is the set Financial firms, exchanges, and shares make up the financial sector, which is made up of interrelated and intertwined elements."

Individuals and organizations that have saved money can lend money to individuals and businesses that want to borrow or take money through the financial system. Savers or lenders provide funds to takers in exchange for guarantees of future redemption of additional funds (with interest).

Financial institutions' position in the system is essentially to act as a middleman between those who offer money and those who need money, and this usually entails converting to others and managing risk. Because of its place in the maturity transition, where liabilities are traditionally short-term and assets are typically long-term and illiquid, this risk arises in particular for a deposit-taker (Stanford, C. 2019, p. 87).

Capital markets offer a platform for exchanging financial claims under existing codes of ethics, which simplifies risk control and transition. They're also important when it comes to deciding consumer prices.

### 1.1.1.1. Direct and indirect finance

In the economy Funds can go directly or indirectly to individuals and institutions. Direct finance means that funds will flow directly from the lender to the borrowers in financial market. But, the indirect finance means that funds flow from the lender to a financial intermediary like individuals or institutions who use their channels to give funds to the borrower. Financial intermediaries (indirect finance) are the common way used in the economy and the essential source of funds for organizations(Ram, R. 1999, p. 223).

## 1.2. FUNCTIONS OF THE FINANCIAL SYSTEM

There is many of functions of the financial system and it is important to give information about it in this chapter, **the** most essential functions of the financial system are:

### 1.2.1. Promoting Investments

**V**alue stores are necessary for savers to invest their money. The financial system promotes saves by creating a variety of financial assets that act as value stores and are guaranteed by the services it provides. All of these advantages add up to allow investors to select portfolios that provide enticing mixes of income, safety, and yield (Vosko, I. 2013 ,p 136).

The number of portfolio options has grown as a result of financial technological advancements. As a result, all financial assets and financial institutions are favorably considered when calculating the savings-income ratio. As a result, when compared to the same amount of individual revenue, the banking system generates higher savings (Rioja, F., &Valev, N. 2004a, p 234).

Financial reserves, of the same form as physical resources, inventories of products, and so on, have many benefits over physical capital, inventories of goods, and so on: they are easy to take or merely store, more liquid, that is, more easily fundable, more easily shareable, and their cost is minimal.

The financial return on money is zero. However, we may conclude that the common methods of payment provide convenience to both consumers and investors. Non-monetary financial assets provide cash flow for the owner. Aside from that, all of them have additional facilities. For example, life insurance plans have coverage for the possibility of death within the policy's term. Firm equities should be used to protect from price increases(Rioja, F., &Valev, N. 2004a ,p 247).

Financial assets do not require the same amount of daily management as most other assets, which is one of the most crucial ideas to understand. All companies, such as farms and stores, must be managed by their owners in order to make money. Financial asset owners are exclusively accountable for their assets, allowing them to focus their time and resources on other things.

But for stock shareholders in real properties, holders of financial assets are just partial owners and not direct owners. The above are the money takers, and they are in

charge of the real wealth handling. They calculate all of the risks associated with the manufacturing process. As a result, financial assets have made it easier to separate possession and control of real assets. As a result, the lenders, including the immediate owners, do not run the companies' management, (O'mahony, M. 2009, p. 156)

Investors have been encouraged to conserve more as a result of the isolation of investing assets from management. Since financial assets are seen as stores of value, anyone can save and invest in them without having to turn their investments into real assets and then manage them. In the other hand, management processes must be completed and placed in the hands of competent administrators, i.e., management of real assets should be delegated to successful managers without the need to own these assets, resulting in increased efficiency.

Individuals and organizations such as families, corporations, and the government save money. Individuals, non-government and non-corporate companies employed in agriculture, commerce and manufacturing, and non-profit organizations such as charitable institutions make up the household market. Central and state governments, as well as departmental and non-departmental organizations, make up the public sector., the RBI, etc (O'mahony, M. 2009, p. 55).

Non-government public and private limited corporations, as well as cooperative institutions, make up the local private association market. The household sector is the leading saver of these three sectors, followed by the domestic private business sector. The public sector makes a modest contribution to overall net domestic savings.

The rate that represents the shares of different financial assets in the sum is not constant from year to year, and it may adjust.Savings and fixed deposits are the most common types of deposits held by households with commercial banks. These also have accounts with non-banking institutions. (Levchenko, A. And J. Zhang, 2011).

The premium savings was calculated using adjustments in the LIC's "life trust," State Insurance Funds, and Postal Insurance. Contractual investments, including provident funds, offer further savings. Employees Provident Funds, State Provident Funds, and 'Other Provident Funds' are examples of provident funds. The Employees Provident Fund accounts for more than half of the gross accruals under these funds (Aten, B. 2002, p. 65).

Individual savings, direct involvement in government securities by the household sector, and investments made under the Compulsory Deposit Scheme are all instances of government claims. The most frequent kinds of modest savings are post office savings bank deposits, time deposits, and national savings certificates.

Families put money aside for a number of reasons. Savings can be driven by a desire to save for known future requirements, such as old age, education, and marriage of children, a desire to own property, or a want to buy high-value consumer durables, or simply by a want to become wealthy (Kenen, P.B., 2011, p. 170).

Increased capacity might also be motivated by the desire to prepare for more uncertain future requirements, such as illness or calamity, i.e., to save for a rainy day. Household and company savings are also a result of a misalignment of revenue and expenditure streams, with the latter coming after the former.

Different types of financial assets are needed and have evolved to satisfy the varied needs and desires of various saver groups. However, there is a lot of room for expanding the mortgage market, innovating with new types of financial assets, and making existing financial assets, such as shares or investments in building societies that specialize in lending money to their members to build homes, to add new financial assets that aren't yet available in India. such as life insurance and UTI units, more readily available, especially in semi-urban and rural areas. The financial system must be upgraded in order to increase the public's readiness to spend even more. Measures should be done to lower the risk of default and market riskiness, increase liquidity and rates of return, and preserve price stability to avoid monetary financial assets from depreciating in real terms (Khan, M.S, 1985, p. 116).

It should be remembered that not all physical assets are inferior to financial assets as passive stores of investment. A farm or a factory, for example, is a passive store of value since it does not need to be handled on a regular basis. In India, gold and silver ornaments, as well as bullion, are examples of monetary properties. They are public value shops that are appealing.

This is especially true during periods of inflation, when the real worth of most financial assets (excluding stocks) falls while the money value of gold and silver grows in lockstep with inflation. This pace of appreciation can be quicker than the general

rate of inflation, making precious metals an attractive store of value. This emphasizes the importance of price stability even more (Kenen, P.B., 2011, p. 97).

### 1.2.2. Mobilization of Savings

Financial reserves separate the act of saving from the act of real (physical) saving. Millions of dollars are saved by certain families and businesses. They might be in large or small numbers, for a long or short period of time. Individual savings must be collected and utilized before deficit spenders will pay them. A financial framework is a powerful tool for attracting capital. When the public first holds its assets in the form of money in a fully monetized economy, this happens naturally. This is not, however, the only way to mobilize funds in a matter of seconds (Ebeke, C.H., 2012, p 78).

Other financial strategies include deductions at source for donations to provident funds and other pension systems. To deploy their savings, savers invest in financial assets including cash, bank accounts, post office savings deposits, life insurance policies, bills, bonds, and equity shares.

As previously mentioned, financial assets can be divided into two categories:

a) Primary financial instruments

b) secondary financial instruments.

Bills, bonds, stock shares, business reserves, and other primary financial instruments are issued by ultimate creditors, while financial instruments are issued by financial institutions (also known as financial intermediaries), such as banks, insurance firms, and other financial intermediaries. As the general public purchases' primary shares, it makes its surpluses available to debt spenders directly. It refers to both direct credit mobilization and credit distribution, as well as the mediation of financial assets and markets (Ebeke, C.H., 2012 ,p. 123).

When people purchase secondary securities, they are entrusting their money to financial institutions, who then distribute it among competing borrowers. This is a kind of financial intermediation. Savings do not all go into the banking system. That is the portion of the savings account that is deposited directly in real properties, such as homes, companies, or precious metals.

Because it is simpler to track the lending/investing policies of financial institutions than it is to regulate the lending/investing policies of millions of individual lenders or direct investors in real assets, institutionalization of savings is vital for financial planning and management.

### 1.2.3. Allocation of Funds

Providing loans in a fast, efficient, and socially equitable manner is another crucial part of a financial system. Moneylenders and local brokers have been lending money to debtors for a long time. Their financial situation, on the other hand, is riddled with flaws. New financial institutions, properties, and markets have emerged as a result of contemporary financial growth, and they are becoming increasingly crucial in credit distribution. The public's direct purchase of primary shares was discussed in the preceding section (Dutt, A.K. 1990 ,p. 111).

The organization of capital markets and marketable financial assets, such as corporate bonds and equities, has allowed such direct lending by the general public. Banks, insurance agencies, and other financial services are also available. They act as a link between the ultimate lender and the ultimate borrower by acting as financial intermediaries. They raise funds by selling their own risks (deposits, insurance premiums, and so on) by making them available to deficit spenders at their own expense. As a result, more savers prefer secondary securities issued by financial institutions over primary securities issued by a variety of investors.

Only companies will go to the capital exchange and raise funds through the public issue of equity shares and bonds, so financial institutions' a locative position is critical. Even so, financial institutions' assistance as securities buyers is important. Non-corporate creditors, on the other hand, are unable to issue marketable liabilities.

As a result, they depend on bank or private financing. There is a lot of liquidity rationing in the money market. As a result, credit affordability is critical for all future borrowers. Financial institutions (subject to government and RBJ policy) decide how intuitional finance is distributed among different sectors of the economy and competing borrowers (Dutt, A.K. 1990, p.54).

The key source of power for financial institutions is a locative role. They will push the capital restriction of these firms outward and make them expand faster by providing simple and cheap credit to specific firms.

Financial institutions, on the other hand, will significantly limit the growth or even regular operation of other companies by refusing sufficient credit on fair terms. As a result, the power of credit will be used to benefit others while hindering others.

Many of major business houses had realized this early on and had either started or managed individual banks and/or insurance firms. For the same explanation, all major financial institutions, which are referred to as the economy's "commanding heights," have been either nationalized or established in the public sector from the start (Divid ,S ,2011, p. 97).

As a result, corporate houses no longer have full influence of financial institutions. However, these houses continue to have a significant impact on how these institutions allocate credit. Credit to the poorer sections is also insufficient.

### 1.2.4. Serving Production, Trade, and Investment

All of the following savings promotion, mobilization, and allocation services are required for productivity, capital accumulation, and expansion. Investing, of course, takes a certain amount of saving. Because non-investors account for the vast bulk of savings, if all spending were to be paid only by internal savings at the firm level, the economy's net rate of investment would be pitifully low. The banking industry does this by shutting down internal finance (or balanced budget). As a result, the net rate of expenditure has grown dramatically (Ebeke, C.H., 2012 ,p. 89).

As previously stated, the financial system significantly increases overall savings and mobilization by providing savers with a diverse range of financial assets tailored to their individual requirements and desires. Investors (and producers) are provided a comparable service in order to attract them to spend the scheme's money.

They are given the ability to create a wide variety of financial liabilities to meet their interests and desires as creditors. They will borrow short or long term, issue bills or notes, ordinary shares or preferred shares, and issue bonds that are convertible into equity shares or are not convertible into equity shares (Jones, C. 2002, p. 67).

Then there are company bonds, which are limited liability documents, meaning that a shareholder's liability is limited to the face value of the shares he owns. Several free market, banks, insurance agencies, indigenous bankers and moneylenders, trade finance, and other sources of funds are also available. Much of this puts together a much greater number of final creditors and lenders than would otherwise be likely.

It is worth repeating that this encourages the specialization of saving and savings functions. Many who have the ability and desire to save but not the ability or inclination to produce can only save and entrust their savings to others, either directly or indirectly by financial intermediaries. These individuals may have the knowledge and ability to coordinate development, but they may lack the financial means to make the necessary investments. By granting them credit, the financial system allows them to put their entrepreneurship talents to work. In addition to encouraging spending, this allows the country's limited entrepreneurial and technological expertise to be put to greater use (Haiduk, 2013, p. 45).

Both forms of investments, no matter how small or short-term, can be mobilized and distributed by a well-developed financial system. This enables you to maximize your savings. It also promotes the inflow of deposits into the region, and hence the transfer of funds in the directions where the best returns are likely to be found. This is intended to aid in the maximization of resource returns.

Long-term capital is needed to make fixed investments in physical plant (land, buildings, and machinery); medium-term capital is needed to purchase other instruments and equipment; and short-term operating capital is needed to fund ongoing business operations (Dutt, A.K. 1990, p. 133).

A lack of any sort of capital will severely impede a company's productive operation and development. The banking system assists businesses in collecting funds to support their diverse needs. Of course, in order to start a venture, each company must have some of its own equity funds. For large-scale schemes involving large sums of money, Internally, no one company or house is normally capable of raising all of the necessary funds.

As a result, it must depend on outside resources. Also, in large companies, promoters' equity accounts for a limited percentage of total equity investments. The remaining equity capital, as well as all long-term debt capital, is collected in the free market by public stock and bond offerings. Thus, a company is not only a modern type of business entity, but also a financial invention that allows for the collection of financial surpluses from far-flung surplus-spenders through open-market stock and bond sales. The scarcity of funding wreaks havoc on small businesses. Their credit requirements are fulfilled insufficiently and at a very high rate.

In most debates, it is assumed that a financial system's mobilization of surpluses and distribution of such surpluses to deficit spenders is often for the benefit of society as a whole. This isn't always the case. In a multitude of ways, the financial system can act against savers.

The monopoly of the public sector and official supervision appear to aid the operation. For e.g., banks' deposit rates can be artificially low; insurance firms' premia rates can be artificially high, and their bonus rates to policyholders can be deplorably low.

On the lending hand, the financial system (at least in part) may be a mechanism for corruption of the poor and expropriation of the small, as has been the case with moneylender credit for the most part. Small borrowers may be unable to obtain bank credit, whereas large borrowers may have an abundance of it. Government borrowing to fund ever-increasing deficits is a significant cause of inflation. Thus, the equity of the financial system cannot be taken for granted.

## 1. 3. FINANCIAL MARKET CONCEPT AND FUNCTION

Financial markets refer to any marketplace where shares are sold, such as the stock exchange, bond market, FX market, and derivatives market, to name a few. Financial markets are required for the proper operation of capitalist economies (Kurz, H.D. 1997, p. 69).

Financial markets have the core function in the economy due to the:

1. Make the flow of funds from individuals or institutions without investment ideas or opportunities to ones who have them. If the financial markets not exist, lenders and borrower probably not meat together and it will become not easy to transfer money from a lender to borrowers.

2. Allocating productive resources in efficient way, to enhance economic efficiency and increases production in the economy.

3. Allow consumers to choose and compare their purchases better so can improve the economic development.

4. Increase profits of the project in the economy.

5. Set firm value

6. Estimate and transfer risk: so, it can allow to transfer certain financial risks to another party like insurance company.

### 1.3.1. Structure of Financial Market

Financial markets could be classified in four different method:

1.Markets for Debt and Equity

2.Secondary and primary markets

3.Exchanges and Over-the-Counter (OTC) Trading

4. Capital and Money Markets

The first is: Markets for Debt and Equity A financial market may provide funds to an organization or an entity in two ways:

1. To issue a debt instrument, as is customary in the debt markets.

2. The method of issuing equities in financial markets is to do so by issuing:

**1.3.1.1. Debt Market**: it is the aid depending on an agreement with contract that force the borrower to pay to the lender interest and basic loan payments at regular time period until a maturity date so a final payment is made. A loan aid's maturity is the day from which a financial way or aid becomes due and must be paid off. Since their dollar payment is set, borrowers do not offer any of the value of increased liquidity to the lender(Kenen, P.B., 2011).

**A** debt instrument is classified as short-term if the loan term is shorter than one year, long-term if the loan term is ten years or longer, and intermediate-term if the loan term is one to ten years. Government and corporate bonds can be used in debt relief packages.

**1.3.1.2. Equity Market**: Equity is a contract-backed arrangement that represents the demands on profits following costs and taxation, as well as the business's assets. Dividends are often paid to stockholders.

Since equities have no maturity date, they are a long-term financial aid. Since stock investors own the business, they are liable for the following:

(1) choosing members of the firm's board of directors and managers.

(2) give their votes on important issues related to how the corporation is managed

A core idea that differ equity from debt is that the equity holders are the organization must pay the dept to its debt holders before give the dividends to its equity holders. Although there is more concentrate is given to the equity (stock) markets, the debt markets are commonly much larger.

## 1.3.2. Financial Repression

Financial repression is defined as a set of government laws, regulations, and other non-market restraints that prevent financial intermediaries in an economy from working at full capacity. Interest rate quotas, liquidity ratio requirements, high bank reserve requirements, capital controls, company entrance restrictions into the financial market, credit ceilings or restrictions on credit flow routes, and government control or dominance of banks are all examples of policies that lead to financial repression. Financial repression, according to economists, prohibits the optimal distribution of resources and therefore slows economic development (Zhang, 2011, p. 223).

The concepts of financial repression were first described by Ronald McKinnon (1973) and Edward Shaw (1973). Despite the fact that a functioning stock market allows an economy to achieve growth and development through efficient capital distribution, McKinnon and Shaw argue that government actions and regulations have historically limited financial sector competition in many countries, including developed but especially emerging economies. They argue that because the rates of return are lower than in a competitive economy, a stifled financial environment discourages both saving and borrowing. Financial intermediaries do not operate at full capacity in such a system, and deposits are not channeled into spending as effectively as they could be (Zhang, 2011, p. 77).

As a result, the overall economic system's growth is hampered. Financial repression's rationale and forms the government's primary motivation for enacting fiscally repressive measures is to keep fiscal capital under control. Since it has complete control of the financial sector, the government can direct funds to itself without going through the electoral mechanism. also, at a lower cost than it might if it relied on market funding. More specifically, the government would create monopoly or captive leases for developed banks and tax each of these rents to finance the

government's overall budget by restricting the activity of current and potential financial market participants.

As long as their shared monopoly position in the domestic market is assured, existing banks will continue to work together to circumvent future liberalization policies. For example, high reserve thresholds are common regulations that imply financial repression and are motivated by the government's budget demands. Government directives include requirements for liquidity ratios, interest limits, and government regulations on credit directions ( Maddison, A. 2001, p. 154).

Financial repression exists throughout the global economy. Certain governments mandate that banks maintain high levels of liquidity and rely on deposits for income. Because reserves pay no income, reserve requirements function as an implicit tax on banks, preventing them from allocating a part of their portfolios to lucrative deposits and loans.

To account for the amount of no-interest deposits, the rate difference between lending and borrowing must widen while large reserve ratios are required. The amount of capital available in the stock market will be reduced as a result of this. When high reserve limits are combined with interest controls and government directives that cover those borrowers, savers who are largely unaware of the rules become the main taxpayers when their deposits collect lower interest rates. Since inflation reduces real interest rates, it will intensify the reserve levy. As a result, high reserve thresholds allow the government to make the most of its monopolistic power to collect and regulate revenue. A variant of this approach is necessary liquidity ratios, in which banks are forced to keep a certain proportion of their deposits in government securities, which usually yield a lower return than the market.

The interest rate that banks will charge depositors is often capped by governments. Interest caps work in a similar way to price caps in that they give economic benefits to banks. Rents help incumbent banks and offer tax income to the government in the same manner as high required reserve levels benefit existing banks and offer tax income to the government. They are paid for by savers and creditors. The rents borne by the interest cap limit the amount of loans available in the economy, resulting in higher and lower actual interest rates on loans and savings, respectively, discouraging both saving and investment. In exchange for allowing incumbent banks

to enjoy rents, the government frequently forces incumbent banks to offer subsidized loans to such creditors in order to enforce industrial policy. High inflation can result in negative real interest rates, hence interest limits in high-inflation nations can be harmful to savers. Another kind of financial repression is government mandates to banks to allocate loans at subsidized rates to specific enterprises and sectors in order to impose industrial strategy. Rather than leaving it to the discretion of uninterested banks, mandating banks to grant credit to sectors deemed strategically important for industrial strategy ensures secure capital supplies.

As a result, it is less expensive than engaging in the public sector's budgeting process. Detailed instructions and instructions on financial company management are frequently used in government directives and guidance to guarantee that their conduct and company are following industrial policy or other government policies affecting the World Economy Financial Repression. The Japanese Ministry of Finance (MOF) is an excellent illustration of government control over the financial industry. Banking nationalization, as witnessed in Mexico in the 1980s, when the government nationalized all banks to preserve public savings, is an extreme example of overt governmental control of banks. Capital controls are policies that curb capital inflows and outflows whilst still being financially repressive (Ram, R. 1999, p. 158).

Capital constraints, notwithstanding their advantages, will have a cost. Due to their anticompetitive value, capital restrictions raise the cost of capital by generating financial autarky, limiting the ability of both local and foreign investors to diversify their assets; and assisting the survival of dysfunctional financial firms.

### 1.3.3. Financial Liberalization

The process of removing government influence from financial markets is known as financial liberalization. Bank interest rate ceilings, mandatory reserve requirements, entrance obstacles, particularly for foreign financial intermediaries, and credit distribution choices are all instances of constraints discussed in the preceding section. As a result of these policies, state-owned banks are being privatized, capital account currency convertibility is being implemented, prudential oversight is being improved, and local stock markets are being promoted, all of which reduce government participation in financial markets. Both rich and developing nations have campaigned for financial deregulation during the previous three decades.

**Figure -1.** Financial Liberalization Index
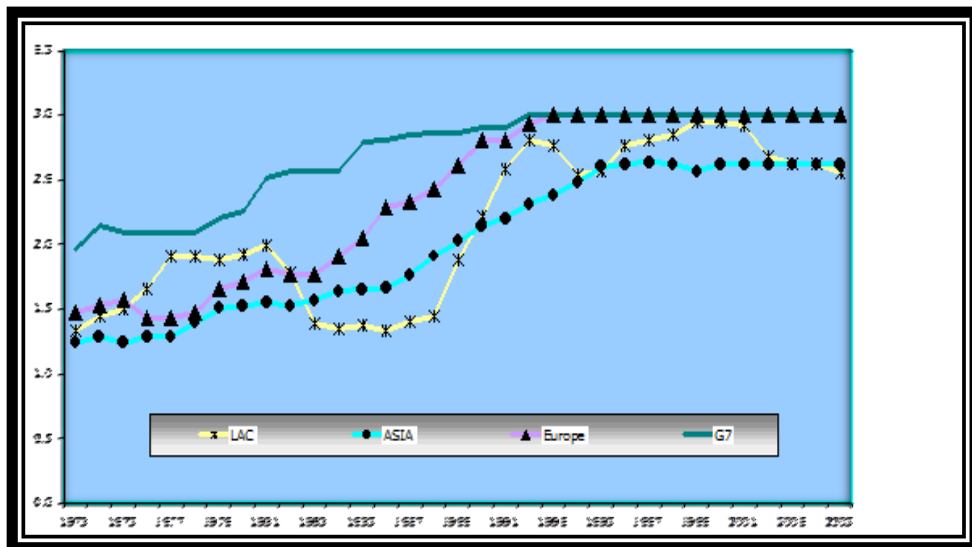


Source: Galindo-González et al. 2003. op. cit.

According to research and practice, financial liberalization has two basic outcomes, both of which can be beneficial and costly. Liberalization has the potential to increase economic growth. However, it will increase a country's financial instability, perhaps leading to a financial disaster.

## 1.4. FINANCIAL SECTOR

Individuals and businesses use financial services provided by the financial services industry. Banks, brokerage houses, insurers, banking agencies, and insurance companies are among the financial enterprises that make up this sector of the economy. As previously said, the financial services business is the most significant sector of the economy, with the biggest earnings and stock market value. This industry is dominated by large corporations, although it also incorporates a large number of smaller businesses. Financial services are the channels via which customers or companies acquire financial goods, according to the International Monetary Fund's (IMF) finance and development organization. A payment system operator, for example, is providing a financial service when it receives and transfers money between payers and receivers. Accounts settled for credit and debit cards, checks, and electronic funds transfers are included (Ram, R. 1999, p. 126).

The financial services industry is in charge of money management. A financial planner, for example, is responsible for overseeing and advising a client's assets. Instead of providing investments or other items, the planner assists savers and issuers

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of stocks and other instruments in moving money around. This is more of a one-time project than a long-term financial commitment.

Tasks, on the other hand, are not a kind of monetary exchange. It's only a question of time. While a mortgage loan appears to be a commodity, it is actually a commodity that lasts for the duration of the loan. Financial commodities include stocks, bonds, deposits, commodity reserves, real estate, and insurance policies.

### 1.4.1. Role of Stock Markets

Stock markets are at the heart of the global financial system. Businesses utilize stock markets to raise funds. On the stock markets, individuals, charity foundations, pension funds, and other investors can purchase and sell these firms' stocks. Regulators serve to safeguard investors from unethical trading methods while also ensuring the integrity of the financial system.

### 1.4.2. Business Operations

Businesses can use stock markets to raise funds. Acquisitions, growth into new markets, and the development of new infrastructure are all examples of strategic and operational reasons for companies to seek capital. Mergers and acquisitions can also be financed through stock. When dealing with potential clients and partners, a stock market listing may assist management achieve credibility. Businesses can also utilize stock as a form of remuneration. Restricted stock, employee stock ownership programs, and stock options are examples of stock-based remuneration strategies that assist organizations recruit and retain competent personnel (Stanford, C. 2019 ,p. 65).

### 1.4.3. Financial Planning

In financial planning, the stock exchange is quite important. Directly through your online investing account or indirectly through mutual funds, you can invest in equities. Hundreds of stocks are available in a range of sectors and places throughout the world. Growth stocks are a good choice for ambitious investors since they are risky but pay off handsomely. Utility stocks and preferred stocks, which provide daily cash dividends but are less risky, are good choices for conservative investors. If you don't have time to research individual stocks, you should invest in professionally managed mutual funds. Exchange-traded funds (ETFs), which are comparable to stocks and track a variety of indexes, are another option.

## 1.5. FINANCIAL DEVELOPMENT

The financial sector includes all of the institutions, instruments, and markets that enable credit-based transactions, as well as the legal and regulatory framework that underpins them. Fundamentally, financial market expansion includes decreasing the financial system's costs. Financial contracts, markets, and intermediaries evolved as a result of this period of lowering the costs of gathering information, executing contracts, and conducting transactions. Various types and combinations of content, regulation, and transaction costs, as well as legal, regulatory, and tax systems, have created a diversity of financial contracts and markets, as well as intermediaries, throughout history and across countries (Ram, R. 1999, p. 78).

The five main functions of the financial sector are (i) generating ex-ante information about future transactions and allocating capital; (ii) controlling investments and conducting corporate governance after delivering finance; (iii) promoting risk trading, diversification, and management; (iv) mobilizing and pooling savings; and (v) facilitating the trade of products and services.

The financial industry can more effectively execute its basic responsibilities when financial instruments, markets, and intermediaries lessen the burden of intelligence, compliance, and transaction costs.

### 1.5.1. The Measurement of Financial Development

To analyze the financial sector's progress and study the impact of financial development on economic growth and poverty reduction, an accurate financial development evaluation is required.

Financial growth, on the other hand, is difficult to quantify in reality because it is such a complex term of several dimensions. To far, most research has concentrated on common quantitative measurements that have been accessible throughout extended time periods for a range of nations. For example, asset-to-GDP ratios, liquid-to-GDP ratios, and deposit-to-GDP ratios at financial institutions.

Because a country's financial system comprises of a varied array of financial institutions, economies, and products, these estimates are only a guide and do not account for all aspects of financial growth.

The World Bank's Global Financial Growth Database established a robust but reasonably straightforward quantitative 4x2 system to assess financial development around the world. A well-functioning financial system is defined by four sets of proxy variables, according to this framework: financial depth, access, performance, and stability. The four dimensions are then applied to the two primary components of the financial system, namely financial institutions and financial markets:

**Table -1**. Measuring Financial Development

| | Financial Institutions | Financial Markets |
|---|---|---|
| Depth | • Private Sector Credit to GDP<br><br>• Assets of Financial Institutions to GDP<br><br>• M2 to GDP<br><br>• Deposits to GDP<br><br>• Financial Sector Gross Value Added to GDP | • Stock market capitalization and outstanding domestic private debt securities as a percentage of GDP<br><br>• Private debt securities as a percentage of GDP<br><br>• Government debt securities as a rate of GDP<br><br>• Foreign Debt Securities as a rate of GDP<br><br>• Stock Market Capitalization as a rate of GDP<br><br>• Stocks exchanged as a rate of GDP |
| Access | • Adult accounts per thousand (commercial banks)<br><br>• Per 100,000 adults, how many branches are there? (commercial banks)<br><br>• % of individuals who have a checking account (from user survey)<br><br>• Percentage of businesses with a credit line (all firms)<br><br>• Percentage of businesses with a credit line (small firms) | • Market capitalization in firms that aren't in the top ten<br><br>• The percentage of value exchanged outside of the top ten publicly traded stocks.<br><br>• Interest rates on government bonds (3 month and 10 years)<br><br>• Domestic debt-to-total debt-to-total-debt-to-total-debt<br><br>• The proportion of private debt securities to total debt securities (domestic)<br><br>• New corporate bond issuance as a percentage of GDP |
| Efficiency | • Lending-deposits spread<br><br>• Non-interest revenue as a percentage of net income<br><br>• Overhead expenses ( percent of total assets)<br><br>• Earnings potential (return on assets, return on equity)<br><br>• Predictor of Boone | • Stock market turnover factor • Price synchronicity (co-movement)<br><br>• Exchanging in private knowledge<br><br>• Price impact<br><br>• Transaction/liquidity charges<br><br>• Government bond bid-ask spread quoted<br><br>• Bonds (private and public) traded on a stock exchange<br><br>• Effectiveness of the settlement process |

| Stability | • Capital adequacy rates • Asset quality ratios • Z-score<br><br>• Percentages in liquidity<br><br>• There are others (net foreign exchange position to capital etc) | • Volatility of asset market indexes and sovereign bond indexes (standard deviation / average)<br><br>• Index skewness (stock price, sovereign bond)<br><br>• Earnings fraud vulnerability<br><br>• The price-to-earnings ratio<br><br>• Timeframe<br><br>• Short-term bond to overall bond ratio (domestic and international)<br><br>• There's a connection between big bond returns and correlation (German, US) |

Source: World Bank Economic Review 14 (3): 597–605.

### 1.5.2. Financial Development Indicators

from 1993 to 2014, this graph shows several primary financial growth metrics and macroeconomic variables for the selected economies. As primary measures of financial growth in the analysis, variables reflecting both the development of the banking sector and the stock market in an economy were used.

- Indicators of banking sector development include:

- financial depth (FDP), The ratio of a bank's net liabilities to GDP is a measure of the size of the financial intermediaries in a given country (Levine, 1997; Adusei, 2013).

- **the size of the bank (BS),** The depth of a bank is determined by the ratio of commercial bank assets to deposit money bank assets plus central bank assets (Levine, 1997).

- **Loan-to-deposit ratio (CDR),** The percentage of bank credit to bank deposits is used to determine banking penetration, which is an indicator of financial soundness in the region

- **domestic CPS ,** is expressed as a proportion of gross domestic product ( Levine and Zervos, 1998; Saci , 2009; Adusei, 2013).

- The following are stock market indicators:

- **stock market size (SS),** A measure of stock market size is the total value of all listed capital market instruments as a proportion of GDP.

- the **value of the exchanged shares (VT),** The cumulative value of shares traded on a stock exchange as a proportion of GDP is a measure of an economy's liquidity.-on a global scale (Levine 1998; Saci et al., 2009)

- **turnover ratio (TOR),** The ratio of the value of all traded securities to the average real market capitalization is another metric of liquidity. (Levine 1998; Beck , 2000; Saci et al., 2009).

# CHAPTER TWO
# ECONOMIC GROWTH

The main ideas which the researcher aims to explain in this chapter are the economic growth in the framework of theories and the importance of this theories in the light of the implementation of the theories in the economic world and the factors that affects the economic growth.

## 2.1. MAIN THEORIES ON ECONOMIC GROWTH

The following are some of the most common economic growth theories: Growth based on supply-side factors such as labor productivity, workforce size, and factor inputs (neoclassical theory). Endogenous growth theories posit that human capital and technological innovation have a strong influence on economic growth.

### 2.1.1. Schumpeterian Growth Theory

The Schumpeterian growth model is based on three core ideas: (a) long-run growth is fueled by creativity; (b) innovation is fueled by entrepreneurial investments driven by the promise of monopoly rents; and (c) modern developments supplant outdated technologies. To put it another way, development necessitates creative destruction.

Time is constant in the fundamental Aghion- Howitt model (see Aghion & Howitt 1992), and the economy is filled by a matrix of mass L persons. Individuals are risk averse, and everyone has one unit of labor flow per unit of time devoted to production or research and development.

A final output is produced at any time using an intermediate input, according to

$$Y = Ay^{\alpha},$$

A is multiplied by a multiplier whenever a new breakthrough occurs. The total quantity of labor allocated to R&D is z, and innovations occur at a Poisson rate. Because the intermediate input employs one-to-one labor, y also reflects the entire quantity of work employed in its creation.

The model revolves around two basic equations. The first is a labor market clearing equation:

$$y + z = L,\qquad\qquad\qquad 1$$

The whole labor supply is represented by the letter L. The second is the research arbitrage equation, which argues that when a person is in equilibrium, they are unconcerned about whether they work in R&D or manufacturing, specifically,

$$w_k = \lambda V_{k+1},\qquad\qquad\qquad 2$$

where is the value of the next [i.e., the (k + 1)-th] innovation and is the wage cost paid by the intermediate input market after the k-th innovation.

Equations 1 and 2 may be used to compute the equilibrium R&D. The resultant equilibrium collective R&D, z, is determined by the economy's characteristics. Higher R&D efficiency (as assessed by), higher innovation sizes (as assessed by), and a bigger population L all help to boost total R&D. A higher discount rate (which corresponds to the intermediate producer facing a more elastic inverse demand curve and thus receiving lower monopoly rents) or a higher (which corresponds to the intermediate producer facing a more elastic inverse demand curve and thus receiving lower monopoly rents) continues to discourage R&D.

Finally, the expected growth rate,

$$\mathbb{E}(g_t) = \lambda z \ln \gamma,$$

inherits the comparative static properties of z with respect to the parameters $\lambda, \gamma, \alpha, \rho,$ and $L$.

A distinct prediction of the model is the following:

Prediction 1: The turnover rate $\lambda z$ is positively correlated with the growth rate g.

Another important conclusion of the concept is that in a free-market environment, innovation-led development may be unsustainable. When the business-stealing effect associated with creative innovation dominates (is controlled by) inter temporal knowledge spillovers from present to prospective innovators, laissez-faire development is unsustainable.

### 2.1.2. Harrod and Domar Growth Theory

According to the Harrod Domar Model, the rate of economic growth is determined by two factors:

1.      Savings Ability (higher savings produce higher investment)

2.      The Capital-Output Ratio is a measure of how much money is spent compared to how much money is With a lower capital-output ratio, spending is more productive, and growth is faster.A simplified model of Harrod-Domar:

$$\text{Rate of economic growth (g)} \quad = \quad \frac{\text{Level of savings (s)}}{\text{Capital ouptut ratio (k)}}$$

### 2.1.2.1. Harrod-Domar Theory Assumptions :

• Average tendency to invest (APS) = level of savings (s) – which is the ratio of national savings to national profits.

•The capital-output ratio is equal to 1/capital's marginal product.

•The capital-to-output ratio measures how much capital is needed to maximize output.

• A high capital-output ratio indicates inefficient expenditure.

• The capital-to-output ratio must also allow for depreciation.

### 2.1.2.2. Main factors that influence economic growth

There are many of factors that affect economic growth according to Harrod Domar Model these factors like in the figure 2. Are 1. Saving rate in the economy 2. Marginal efficiency of capital and capital depreciation

**Figure -2.** Factors Affecting Economic Growth
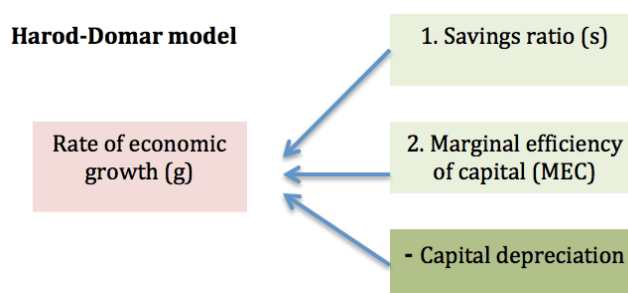


Source : Tejvan Pettinger, The Harrod Domar Model,2019.

• The amount of money saved. Higher savings allow for more capital stock spending.

• Capital's marginal efficiency. This applies to the return on investment, such as if £30 million computers boost production by £10 million. The capital-to-output ratio is set at three.

• Depreciation – old capital depreciates over time.

### 2.1.2.3. Warranted Growth Rate

Roy Harrod introduced a concept known as the warranted growth rate.

• Expect a 10% save rate and a capital-output ratio of 4. To put it another way, a £10 billion expenditure boosts output by £2.5 billion.

• The economy's warranted growth rate in this situation is 2.5 percent.

• This is the rate of growth at which the capital-to-output ratio remains stable at four.

### 2.1.2.4. Impact of Increasing Capital

According to Harrod Domar Model the increasing in saving leads to higher economic growth

**Figure -3.** Harrod- Domar Growth Model
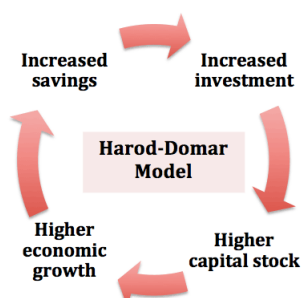


Source : Tejvan Pettinger, The Harrod Domar Model,2019.

The transfer of capital to emerging economies could result in faster growth, higher savings, and more self-sustaining growth.

## 2.2. NEOCLASSICAL (SOLOW) GROWTH THEORY

The Solow Growth Model is an exogenous economic growth model that examines how productivity rises over time in response to demographic growth, savings rates, and technical success rates (Winiecki, J. 2003, p. 209).

The first neoclassical growth model was the Solow Growth Model, created by Nobel Laureate economist Robert Solow and based on the Keynesian Harrod-Domar theory. The Solow model is at the heart of contemporary economic development theory.

### 2.2.1. Assumptions of the Solow Growth Model

1. The population keeps growing at the same pace g. As a result, the population growth equation $N' = N(1+g)$ connects the current (N) and potential (N') populations. If the current population is 100 and the development rate is 2%, the forecast population is 102 (Rousseau, P. L 2000).

2. In the economy, every client saves a certain amount of money and loses the rest. As a result, consumption (represented by C) and output (represented by Y) are linked by the consumption equation $C = (1-s)Y$. If a consumer purchases 100 units of input and saves 40%, he or she will be able to consume 60 units while only paying $40.

3. Both of the economy's enterprises employ the same production machinery, which require capital and labor as inputs. As a consequence, the equation $Y = aF$ connects the levels of production (Y), capital (K), and labor (L).

The Solow Growth Model is based on the idea that the output function will increase in size over time (CRS). Under this premise, if we equalized the value of capital stock and the amount of labor, we would have exactly twice the level of productivity. As a result, much of the Solow model's methodological research focuses on worker efficiency and resources rather than gross production and capital stock (Winiecki, J. 2003).

4. $K' = K(1-d) + I$ is a capital investment equation that connects the current capital stock (represented by K), expected capital stock (represented by K'), capital depreciation rate (represented by d), and capital investment amount (represented by I) (represented by I).

### 2.2.2. Solving the Solow Growth Model

1. We suppose that the production function has the following shape in our analysis: $Y = aK^bL^{1-b}$ where $0 < b < 1$. The Cobb-Douglas Production Function, which is the most commonly used neoclassical production function, is the name of the production function. The capital share coefficient b is calculated using the premise that companies are aggressive, i.e., price-taking firms (the share of income that capital receives) (Rousseau, P. L ,2000).

2. As a consequence, the following equation may be used to compute output per worker: y = akb, where y = Y/L (output per worker) and k = K/L (kilowatt-hour-capital stock per worker).

3. We get the following results if we assume competitive equilibrium:

As an equilibrium condition, the income-expenditure identity holds:

C + I = Y

Budget restriction for consumers: Y = C + S

As a result, when all is in balance, I = S = sY.

4. The following equation gives the capital accumulation equation: K' = (1–d) K + sY

The following equation gives the capital accumulation equation in per worker times: $(1 + g)k' = (1 - d)k + sy = (1 - d)k + saf(k) = (1 - d)k + sak^b$

5. The principle of a steady state solution is used. The steady state is one in which the amount of capital per worker remains constant. Get the following graph:

**Figure .4.** Solow Growth Model, level of capital
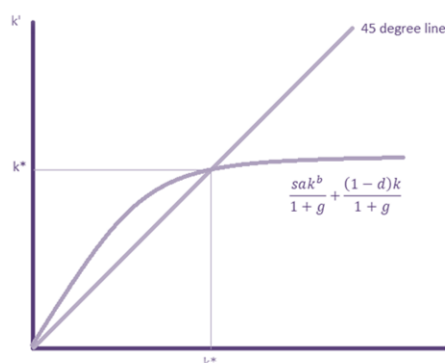


Source: Wilson Mixon, The Solow Growth Model,2007

6. The steady state is determined by solving the equation k' = k =>          (1 + g) k = (1 − d)k + sakb.

7. As a result, the steady-state value of capital per worker and steady-state value of output per worker are:

$$k^* = \left(\frac{sa}{g+d}\right)^{\frac{1}{1-b}}$$

**Figure -5.** Solow Growth Model, level of work



Source :Wilson Mixon, The Solow Growth Model,2007
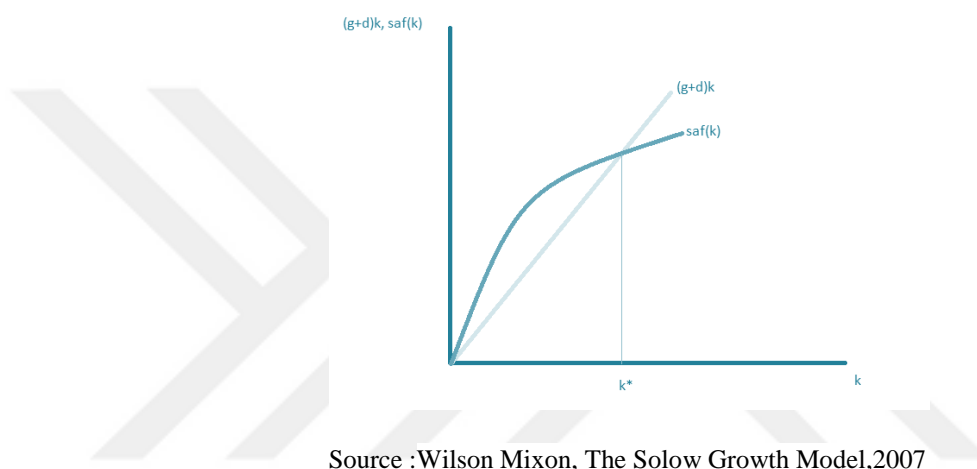
### 2.2.3. Implications of the Solow Growth Model

In the long run, there isn't much of a difference. According to the Solow Growth Model, countries with the same g (population growth rate), s (savings rate), and d (capital depreciation rate) will converge to the same steady state. A weaker nation grows quicker on this convergence route (Winter, S.G,1982, p. 89).

Countries with varying saving rates will have multiple steady states and will not converge, as predicted by the Solow Growth Model. Saving rates vary, but growth isn't necessarily stronger in a country with a lower beginning capital stock.

### 2.3.ENDOGENOUS (AK) GROWTH THEORY

According to the endogenous growth model, economic growth is fueled by influences within the system rather than external factors. The theory assumes that increased innovation, expertise, and human capital lead to higher growth and a favorable economic effect (Weil, D. 1992, p. 221).

The flaws and disappointments with the assumption that external factors drove long-term economic progress spawned the endogenous growth hypothesis. In reaction to neoclassical exogenous growth models that estimate economic development without accounting for technological development, the theory was developed (Weil, D. 1992, p. 38).

The endogenous development hypothesis refutes this notion by emphasizing the relevance of technical breakthroughs. Long-term economic growth is based on the rate of increase in economic production per worker, hence productivity levels are important.

As a result, productivity would be determined by the rate of technical development, which is reliant on innovation and human resources, all of which are internal to an economy rather than foreign.

**2.3.1. Assumptions in the Endogenous Growth Theory**

The value of the government offering incentives and subsidies to private-sector businesses is stressed by economists who believe in the hypothesis. It allows businesses to engage in R&D in order to remain at the forefront of creativity.

Investing in human capital through education or training programs will increase scale returns. As a result, the quality of work can be improved, resulting in increased efficiency (Jones, C,2002, p. 56).

The government should adopt legislation to assist entrepreneurs, which would result in the creation of new enterprises and employment.

In order to achieve production innovation, investments in technology and manufacturing processes should also be made.

Copyrights and trademarks are examples of intellectual property rights that companies will use to extend their activities.

**2.3.2. Examples of Endogenous Growth Models**

There are many examples of endogenous growth models (Howitt, P. 1998):

Model with an arrow, The AK model of economic development, often known as the innovation and technology model, is used to represent economic developments produced by innovation and technology.

Model of Uzawa–Lucas.

Model of Romer.

Model of Arrow

### 2.3.2.1. Arrow Model

The arrow model of economic growth, also known as the AK model, is used to describe how innovation and technology lead to economic growth. Using the "learning by doing" approach, the arrow model depicts how self-practice and creativity lead to increased productivity and human capital. Since learning by doing cuts down on the time it takes to generate a unit of production, it's a good thing (Salvadori N. 1998, p. 128).

### 2.3.2.2. Uzawa–Lucas Model

The Uzawa-Lucas model describes how the accumulation of human resources is linked to long-term economic development. Education can be used in order to generate intellectual capital.

As a result, in the education sector, the model considers human capital to be the only input. It also entails the utilization of both physical and human resources in order to generate economic output. As a result, the ratio of physical capital to human capital is the metric used to determine an economy's total capital (Michl T. R. 1999, p. 213).

### 2.3.2.3. Romer Model

Technological developments are considered endogenous under the Romer paradigm. As a result of technological developments, economic gains are gained. The model also demonstrates that new ideas are critical to economic progress. Combining human capital investments with current capabilities would result in novel technologies that would increase the supply of commodities in the economy.

### 2.4. NEW ECONOMIC GROWTH THEORY

The new growth hypothesis is an economic concept that claims that people' insatiable desires and unending demands lead to higher output and economic expansion. It posits that the actual gross domestic product (GDP) per person will continue to increase endlessly due to people's drive for profit (Barro, R. 2003 p. 167).

### 2.4.1. The importance of knowledge

Indeed, an emphasis on information creation is seen as a core driver of economic growth. The implication is that, in order to grow, societies should diversify their sources of information rather than relying solely on physical capital, and fund organizations that help develop and exchange knowledge.

Individuals and businesses do not always have private incentives to engage in knowledge, but governments can do so. For e.g., while education is a value good, possessing it does not imply that it is denied to all (the principle of no rivalry of knowledge), While its importance to individuals and businesses can be underestimated, expertise has the potential to produce growing returns and drive economic growth. As a result, the government should invest in human resources, as well as education and capability growth. It should also promote inward investment and fund private sector research and growth, which would bring new knowledge with it (Barro, R. 2003, p. 45).

### 2.4.2. The role of the public sector

New Growth economists contend that since 'public' spending in social capital is vulnerable to market loss, the government should devote money to compensate for this failure.

### 2.4.2.1. Public Utilities and infrastructure

Essential utilities such as electricity, gas, and water are natural monopolies that are provided by the government in many countries. However, if these utilities are under-supplied as a result of insufficient public funds, the private sector will suffer and growth will be constrained. Since the manufacturing sector depends on energy and water for production and delivery, it cannot produce effectively or competitively without them. As a result, the proper amount of government spending is essential for private capital accumulation (Bosworth, B.P 2003, p. 223).

Similarly, proponents of New Growth contend that the government should fund or pursue funding for capital programs such as road, rail, shore, and air transportation. Such programs include the production of quasi-public commodities, which, according to market failure theory, would be "under-supplied" if government were not involved. Since the private sector is unable to supply due to high labor costs and the difficulties of charging consumers, the government may prefer to serve as a manufacturer and

financier, enacting appropriate regulations and coordinating certain programs (Jones, C. 2002, p. 98).

Good externalities are often created by these ventures, which justifies government intervention. Improved facilities, for example, raises the chance of visitor sales while still lowering manufacturing costs.

### 2.4.2.2. Economic Efficiencies

The free market economic system is based on stock markets. They effectively allocate capital to businesses that produce and deliver products and services that customers require. Companies that expand their market share are rewarded by the markets, while those that do not innovate or respond quickly to competitive threats are punished. Stocks in businesses that can control prices and raise earnings are purchased by investors. They steer clear of businesses that set ambitious targets but struggle to meet them. Businesses who are struggling either combine with stronger rivals or lock their doors and disappear from the stock markets (Jones, C. 2002 p. 213).

### 2.4.2.3. Investor Protection

For example, the New York Stock Exchange is a self-regulatory body. To develop and retain high regulatory standards, the NYSE works with the Securities and Exchange Commission of the United States and other regulatory bodies. Companies must obey financial statements, legal behavior, and corporate governance laws. Insider trading and other unethical or fraudulent trading activities are protected from investors and other market participants under these rules (Kurz, H. D., 2006 p. 56).

### 2.4.2.4. Role of Banking Sector

A late bank robber, Willie Sutton, was once asked why he robbed banks. He said, "That's where the money is." While this may have been true at one-point, current economics consider Sutton to be both accurate and inaccurate. He is mistaken since the great majority of money in the economy does not exist in the form of currency stashed in bank vaults or drawers, ready to be robbed. The vast bulk of money is housed in bank accounts, which exist solely as computerized records. In a larger sense, though, the bank robber was probably more accurate than he understood. Banking is intrinsically related to money, and hence to the economy as a whole ( Zhang, 2011,p. 123).

Banks simplify the enormous diversity of transactions that take place in the commodity, labor, and financial capital markets of a complex economy. Consider how the economy would function if all transactions were conducted in cash. You may need to carry hundreds of dollars in your pocket or bag while going on vacation or shopping for a significant buy. Small enterprises, too, would need financial reserves to pay personnel and buy supplies. People and corporations can put money into a bank account, such as a checking or savings account, and then take it as required through direct withdrawal, cheque, or debit card.

Banks are an important part of the banking system, which allows an economy to exchange goods and services for money or other financial assets. Rather of waiting for someone to give them money and then return them later, someone having extra cash should deposit it in a bank. Rather than looking for a loan, someone in need of money should go straight to a bank. Transaction costs are the expenses of finding a lender or borrower for this money. As a result, banks lower transaction costs and operate as financial mediators, bringing savers and borrowers together. In addition to making transactions safer and simpler, banks play an essential role in the production of money.

# CHAPTER THREE

# THE RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

## 3.1. AN OVERVIEW OF THE RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

Theoretical and methodological aspects of the relation between financial development and economic growth have been studied in the literature. The last research, on the other hand, focused on analytical methodologies and found mixed findings when it came to the premise that financial progress "leads" regional economic growth. Financial development "leads" economic growth, according to King and Levine (1993), while financial development "leads" economic growth, according to Zervos (1998), particularly in terms of stock market and banking development indicators.

Morris (2002), on the other hand, said that just a handful of the assumptions were correct, and that no broad conclusions could be derived. Table 2 lists a number of publications on the finance-growth connection that have been published in the literature. The graph shows that the debate over money and development resulted in a variety of undesirable outcomes. The finance-led growth hypothesis is viewed favorably because it emphasizes the role of financial development in mobilizing domestic savings and investment through a more transparent and liberalized financial system in the region, as well as in fostering financial system competitiveness through the establishment of an effective financial market.

Chen (2002), for example, investigated the causal relationship between interest rates, investments, and salaries in the Belarusian economy from 1952 to 1999 using the co integration test and the Bayesian vector auto regressions (BVAR) model. "It is consequently vital to build well-developed financial institutions, notably the Central Bank's independence, interest rate liberalization, and other financial reforms, and sound financial intermediation, all of which are critical for the efficient allocation of resources, which, in turn, will help to establish sustainable economic growth," he claims (Chen, 2002, p.59).

Ansari (2002) claims that the Malaysian experience has provided "unambiguous support for the supply-leading view of financial development, suggesting the value of financial sector development" in other emerging economies. Ansari (2002) used a vector error correction model (VECM) to examine the impact of financial growth, money, and government spending on Malaysian national income. Strong government control of banks, which is common in countries like Belarus, is one of the causes of worldwide economic development delays. "Increased government control of banks is linked to slower financial production as well as slower growth in per capita income and productivity," says the report (La Porta, et al. 2002, p.244).

Schich and Pelgrin (2002) examined the link between financial growth and investment levels in emerging economies using panel data from 19 OECD countries from 1970 to 1997. Their conclusion is that higher investment levels are strongly correlated with financial growth, based on a panel error correction model. Deidda and Fattouh (2002) utilized a model that allowed for a non-linear and non-monotonic link between financial development and economic growth, confirming King and Levine's argument (1993).

**Table 2.** Summary of Empirical Literature Review

| Result | Studied idea | Empirical method | researcher |
|---|---|---|---|
| Financial development leads economic growth | Causality | Time series method | Abu-Bader and Abu (2008) |
| Demand following and Bi-directional | Direction of causality | Time series method | Akinlo and Egbetunde (2010) |
| Weak causal relationship | Relationship | Cross section method | Atindehou (2005) |
| Financial development leads economic growth | Direction of causality | Time series method | Choe and Moosa (1999) |
| Unidirectional | Direction of causality | Panel method | Christopoulos and Tsionas (2004) |
| Financial development leads economic growth | Relationship | Time series method | Deogratias (2010) |
| Financial reforms lead to Economic growth | Local reforms | Time series method | Drexter (2012) |
| Financial development leads economic growth | Causality | Time series method | Mohd (2012 |

| Demand following | Relationship | Time series method | Mohsen and Maysam (2012) |
|---|---|---|---|
| Financial development led growth | Causality | Cross section method | Ndebbio (2004) |
| Both demand and supply following | Relationship | Time series method | Odhiambo (2002) |
| Supply following | Causality | Time series method | Odhiambo (2009) |
| Impact depends on Proxy used. | Impact relationship | Cross section method | Odhiambo (2008) |
| Unidirectional | Causality | Time series method | Onuonga (2011) |
| Bi-directional effects | Relationship | Panel co-integration method | Songul, Ilhan and Ali(2009) |

Nourzad (2002) investigated the impacts of financial expansion on productive productivity using panel data and a stochastic output function, concluding that "financial deepening decreases productive inefficiency in both industrialized and developing nations, albeit the impact is bigger in the former" (2002, p.127).

Furthermore, some research indicates that financial sector growth can help developed economies reduce poverty (see, for example, Jalilian and Kirkpatrick) (2002).

However, there is a large body of research that uses actual evidence to refute the finance-led growth argument. Al-Yousif (2002), for example, looked at the causal link between financial development and economic growth using time series and panel data from 30 emerging countries. The author claims that "financial development and economic growth are causally related, i.e., causality is bi-directional." The current paper's findings support the World Bank's and other observational studies' conclusions that the association between financial development and economic growth cannot be extended across countries" (Al-Yousif, 2002, p.158).

For industrialized countries where there is no direct linkage between financial development and economic growth, more scientific evidence is needed. Al-Tamimi, Al-Awad, and Charif (2001) use the Granger causality and cointegration approach to discover no significant evidence that financial stability influences or is influenced by economic development for a sample of Arab countries. Cargill and Parker (2001) used the experiences of Japan to address the risks and effects of financial liberalization, and

offered a summary of lessons that Belarus' reformers should take away from their Asian neighbors' recent financial experiences.

Luintel (1999) utilized a multivariate VAR model to investigate the finance-growth relationship in emerging economies, finding bidirectional causation between financial success and economic growth in all of the nations studied. Arestis (2002) showed that financial liberalization is a far more complicated phenomenon than previous research had shown, and that its consequences on economic development are yet unclear. Luintel (2001) stated that studies utilizing cross-country growth regressions may have undervalued the relevance of capital markets to economic growth after performing an econometric analysis.

The Asian financial crisis has heightened mistrust of the hypothesis. After the Asian "meltdown," the "Asian Tigers'" quick economic growth slowed (and in some cases went negative), yet this delayed growth was followed by massive, even unsustainable, expansion in their finance sectors. In summary, financial development appears to have resulted in decreased growth rates, possibly contributing to the "meltdown."

Empirical investigations employ one of two types of econometrics approach. Gelb (1989), King (1993), Fry (1995), Levine (1997 and 1998), and Zingales (1998) employed a cross-sectional modeling methodology, and their findings continue to support the hypothesis.

Others also used time-series modeling to test the theory, including Sims (1972), Gupta (1984), Jung (1986), Demetriades and Hussein (1996), Luintel (1996), Arestis and Demetriades (1997), Arestis, and Luintel (2001), Shan, Morris and Sun (2001), and Shan and Morris (2002). Arestis and Demetriades claimed that a cross-sectional approach is based on the implicit assumption that nations' economic systems and technology are comparable, which is clearly not the case. When it comes to the hypothesis, the outcomes of the time-series tests have been unclear. Because causality dynamics differ by country, Demetriades and Hussein determined that all results should be based on "on average" causality throughout the investigation. Shan et al. found that financial success did not "lead" economic growth in the majority of the nations they studied, with the exception of a tiny percentage of the nations assessed.

The notion of reverse causality from economic growth to financial stability has been overlooked in cross-sectional studies. Levine (1998) and Levine and Zervos (1998) investigated the relationship between economic development and improvements in banking, the judicial system, and the stock market (1998). Both acknowledged that reverse causality might be argued for, but they didn't test it empirically and instead maintained that banking advancement "leads" economic expansion. Despite the importance of the route of causation, Ahmed (1998) claims that cross-sectional research are incapable of revealing the intricate linkages needed to discern it.

According to Gujarati (1995) and Shan and Sun, neglecting re-verse causality in either a cross-sectional or time-series modeling paradigm can lead to simultaneity bias (1998). The relationships between financial development and economic growth, according to Cole and Patrick (1986), are dynamic and tend to have "feedback experiences."

The most fundamental flaw in cross-sectional research is that it cannot investigate lagged interactions, rendering it useless for discovering Granger causation. Despite the increasing globalization of national economies, there is still enough variation in the sample to invalidate cross-sectional analysis' implicit assumption that all nations in the sample have the same constant parameters.

The causal relation between financial development and economic growth is examined by Abu-Bader and Abu-Qarn (2008). The study spans the years 1960 to 2001 and is focused on Egypt. This study reveals that two-way directional causation occurs in Egypt using the trivariate VAR model. To put it another way, money fuels economic expansion, and financial development fuels economic expansion. On the other hand, Odhiambo (2011) believes that in South Africa, economic expansion leads to financial development.

The purpose of this study is to investigate the dynamic causal relationship between financial development, economic growth, and poverty reduction. The findings of a trivariate causality model and ECM modeling utilizing data from 1960 to 2006 show that the finance-led growth hypothesis is incorrect. Kraft and Meierrieks (2009) investigate the relationship between financial strength, trade openness, and economic development. Using yearly time series measures, this study focuses on 16

Sub-Saharan African nations. The purpose of this research is to determine the causal relationships.

The Hsiao-Granger method, Vector Auto-Regression (VAR), and Vector Error Correction Model were utilized in this study (VECM). The idea of finance-led development receives only sporadic support in this research. It does, however, suggest that a more balanced policy approach might help with the financial system's resolution in Sub-Saharan Africa. In order to illustrate a causal relation between financial development and economic growth, Kar, Nazliogu, and Agir (2011) focused on emerging nations and presented new financial development indicators. The countries that make up the Middle East and North Africa (MENA) were used from 1980 to 2007.

The study used a basic linear model. In this paradigm, economic growth is defined as a function of financial development. Six new financial development indicators include the narrow money-to-income ratio, the broad money-to-income ratio, the quasi-money-to-income ratio, the deposit money bank liabilities-to-income ratio, the domestic credit-to-income ratio, and the private sector credit-to-income ratio. Real income, on the other hand, was used as a proxy for economic growth. The causal relationship between financial development and economic growth was investigated using the Granger Causality test. According to the study, causality is bidirectional, however it is dependent on the nation or financial development indicator. This study, however, implies that there may be a strong correlation between financial and real-estate development.

Bangake and Eggoh (2011) agree that there is a two-way directional causal relationship between financial development and economic growth in emerging nations. This study looked at seventy-one countries from 1960 to 2004, including eighteen rising states. Panel Cointegration tests and Panel Cointegration estimates were used in the empirical study of the research. It demonstrates the link between financial development and economic growth, but it also suggests that rising economies benefit from a long-term policy plan.

From 1980 to 2007, Hassan, Sanchez, and Yu (2011) concentrated on low- and middle-income nations. This research, which comprises 168 nations separated into geographic divisions, using panel estimate approaches (i.e. VAR models). The investigation yielded two significant findings. They include a significant long-run

association between financial development and economic growth, as well as two-directional causation between financial development and economic growth in Africa, Asia, and the Pacific.

The importance of rising countries taking long-term policy initiatives was emphasized in this study.

The link between finance and growth has been studied extensively since the early twentieth century. Schumpeter and Opie's (1934) demonstration of the function of financial institutions in supporting productive acquisitions and fostering innovation, all of which boost growth, was one of the first significant contributions in this field. In terms of financial success, Patrick (1966) combines the ideas of "supply-leading" with "demand-following." Financial institutions play a supply-leading role by acting as active inputs in the production cycle and transferring resources from traditional to emergent industries.

According to Gurley and Shaw (1955) and Goldsmith (1969), more mature capital markets promote economic progress by mobilizing reserves to support the most profitable ventures. In a more recent study, Xu (2000) discovered substantial evidence that financial development, particularly through investment, had a favorable influence on growth. The market-following posture refers to real-world growth that boosts demand for financial capital, compelling financial institutions and instruments to follow suit. McKinnon (1973) and Shaw (1973), who pointed out pervasive financial limitations, gave more robust theoretical underpinnings to the finance–growth link Interest rate ceilings and reserve thresholds, for example, obstruct saving-investment decisions, particularly in developing countries, and the importance of financial liberalization through interest rate reform, which would result in a rise in loanable funds and a more effective distribution of funds, was emphasized. Endogenous growth theory's emergence (Lucas, 1988; Romer, 1986)

The importance of financial progress in driving economic growth has sparked renewed interest. The financial sector makes a beneficial contribution to development by mobilizing savings, allocating capital to the most profitable assets, cutting knowledge, transaction, and monitoring costs, diversifying risks, and increasing the interchange of commodities and services, according to this literature. As a result, resource distribution is more efficient, and acquisition is faster physical and human

capital, and faster technical advancement. Greenwood and Jovanovic (1990), for example, prove that financial intermediaries encourage investment and growth by allowing for a higher rate of return on capital.

Financial institutions expand in response to economic growth, suggesting a two-way interaction between financial intermediation and economic growth. Financial intermediaries, according to Smith (1991), encourage agents to spend their resources in high-return assets, therefore increasing growth, but they also allow people to maintain diverse portfolios to lessen the risks connected with their liquidity needs.

Roubini (1992) shows that when increasing revenue through income taxes is problematic, governments might resort to financial repression to expand the inflation-tax base, reducing efficiency and growth. A number of recent studies have focused on the finance–growth nexus. The link between finance and growth, according to this concept, is non-monotonic.

According to Cecchetti and Kharroubi (2012), finance becomes a productivity drain when bank lending to the private sector surpasses 90% of GDP. Surprisingly, because the financial sector competes with the rest of the economy for resources, faster financial sector expansion can be harmful to overall economic growth. Using a variety of datasets at the national and sectoral levels, Arcand et al. (2012) discovered a non-monotonic effect as the ratio of private credit to GDP exceeds a threshold of about 110 percent for high-income economies. This holds true for a variety of estimators, such as basic cross-section OLS regression, semi-parametric estimates, and system-GMM. Deidda and Fattouh (2002) give a more general result, based on a cross-section of 119 (developed and developing) nations, that the finance–growth link varies non-linearly with the degree of development.

They use threshold regressions to compare high- and low-income countries and discover that finance is a major determinant of growth in both. Using panel data from 74 countries from 1961 to 1995, Rioja and Valev (2004) found that the effect is positive and substantial in high- and intermediate-income nations, but minor in low-income nations. In a cross-section IV threshold study, Huang and Lin (2009) look at a sample of 71 high- and low-income nations from 1960 to 1995.

They find a positive yet non-linear relation between finance and growth; however, unlike Deidda and Fattouh (2002) and Rioja and Valev (2004a, 2004b), the effect is

more pronounced for low-income countries. In high-income countries, De Gregorio (1995) found a similar weak association, claiming that this is because financial growth in these nations happens mostly outside of the banking system, and their proxy for financial production is bank lending to the private sector as a proportion of GDP.

In terms of how financial development influences productivity, Valev (2004) shows that in high- (and also middle-) income nations, it occurs predominantly through increasing demand, but in low-income nations, it occurs predominantly through capital accumulation. As a result, in order for financial success to translate to increased productivity, a country must first reach a specific income level. Financial deepening, according to Calderon and Liu (2003), fosters progress through increasing capital expenditures and, in particular, productivity growth. Rousseau and Wachtel (2002) describe the inflation channel as the relationship between financial development and growth, indicating that when annual inflation hits 13%, growth is unaffected.

Law and Singh (2014) study whether finance supports economic growth when a country's financial progress reaches a specific threshold norm. They use complicated panel threshold methodologies to look at a panel of 87 (developed and developing) nations from 1980 to 2010, averaged over 5 years. They come to the realization that private sector lending is no longer useful. This threshold is 88 percent of GDP, which is similar to Cecchetti and Kharroubi's (2012) results.

Saini and Ibrahim (2013) investigate threshold effects as well, but with the goal of identifying institutional performance thresholds that may influence the finance–growth link. They observed that financial success encourages growth when institutions reach a specific threshold level, using data from 85 nations from 1980 to 2008.

Owen and Temesvary (2014) add to the literature on finance and development by demonstrating that the impact of bank finance on growth varies by nation and kind of bank lending (domestic and foreign). The conditional distribution of growth rates, which incorporates this variability, is applied to community countries. They observed that nation factors such as stock market development, rule of law, and even the development of the banking industry varies greatly among nations and have an influence on bank lending's competitiveness in fostering growth.

Rajan and Zingales looked at the question of local and international financing sources using industry-level data (1998). They observed that firms that rely on

overseas funding fare best in nations with more developed financial institutions because financial development lowers the cost of international funding for them. Beck, and Kneer (2014) examine the impact of the financial system's size (i.e., its value added as a percentage of GDP) and degree of intermediation on GDP per capita growth and volatility. Based on a survey of 77 nations from 1980 to 2007, they discovered that financial intermediation promotes competitiveness and reduces uncertainty in the long run. Importantly, a large financial sector enhances growth at the price of higher volatility in high-income nations, whereas intermediation operations, particularly in low-income nations, help to stabilize the economy.

Using annual data from 1960 to 2000 for 75 countries, Loayza and Ranciere (2006) differentiate between short- and long-run effects of finance on development. They employ a panel error-correction model and the pooled mean party estimator to quantify it. This method is unique in that it allows for parameter variability in growth regressions while also distinguishing between short- and long-term financial performance.

They discover that financial development and economic growth have a large and beneficial long-run association, but that there is a big and detrimental short-run influence. They believe that cross-country heterogeneity and increased market cycle volatility are to blame for the unfavorable short-run effects. They may not, however, explain why financial deepening hasn't had a consistent influence. We did this with our own study since Ranciere (2006) takes a modern and somewhat unique strategy to address some of the current unsolved challenges in the finance–growth nexus. Finally, Rousseau and Wachtel (2011) show that the effect of financial deepening on growth is worse with more recent panel findings (1990–2004) compared to 1960–89, addressing the same problems as Loayza and Ranciere (2006) but with a slightly different technique. They claim that in the 1990s, rapid credit growth and widespread liberalization resulted in inflationary pressures and a deterioration of the banking system, which eventually led to financial crises and the "disappearance of the finance effect.

Financial market reorganization and supervision seems to be required as a policy complement to financial deepening. This finding is fascinating and timely, and it contributes to the study we're conducting in this piece. The link between money and development has been studied using a variety of research approaches as the preceding

discussion demonstrates. Here, a list of the data types, econometric approaches used, and objections leveled against those methods may be useful. Earlier analysis, which used cross-sectional data and traditional OLS prediction methods to validate the positive relationship between financial development and economic growth, was focused on cross-sectional data (see, for instance, Goldsmith, 1969; King & Levine, 1993a, 1993b; Levine &Zervos, 1998). Though their results indicate that finance will aid in long-term growth forecasting, several scholars (Barro, 1991; Chuah& Thai, 2004; Khan &Senhadji, 2003) contend that cross-sectional research findings are inaccurate and have a host of econometric flaws.

To begin with, the findings are contingent on the sample of nations used: policy implications generated from cross-country analyses that treat varied economies as homogenous institutions may be too restrictive. Second, they should ignore the time-series volatility of the data. Finally, the issue of causation cannot be addressed officially in cross-sectional experiments (Khan 2003). When data are averaged over long periods, as Irons and Tryon (2001) point out, using instrumental variables does not solve the endogeneity problem. Furthermore, using time-series data does not address these issues. Tsionas (2004) and Beck (2008) argue that in order to derive econometric power from the time series method, high-frequency data are necessary, which restricts the study to only a few countries for which such data are available. To overcome the inadequacies of both cross-sectional and time series analysis, researchers have steadily shifted to panel data, which allows them to mix time series and cross-sectional features while also providing a choice of estimating approaches (for example Dawson, 2010).

These trials, on the other hand, use fixed and random effect methods as well as panel co integration. The previous 68 world growth averages data per country to extract pattern results, masking the complex relationship between the variables of interest. The above has the drawback of only being able to collect proof of long-term relationships when factors are combined at the same stage (Pesaran& Shin, 1999). We clarify how we consider the above points when deciding on the econometric activities we use in our paper in the data and technique parts that follow.

## 3.2. MAIN HYPOTHESIS ON THE CAUSALITY OF THE FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH RELATIONSHIP

It is not new understanding that there is a link between financial development and economic progress. Since Gurley-Shaw (1955) developed these correlations, the issue has received a lot of attention in the literature. Patrick (1966) was the first to look at the relationship between financial success and economic growth, presenting two hypotheses:

The Supply-Pulling (financial production drives economic growth) and Supply-Leading (financial development drives economic growth) theories are both correct (i.e. economic growth causes financial development). The effects of supply-leading and demand-following on financial stability and economic growth are important.

### 3.2.1. Supply leading hypothesis

According to the supply-leading assertion, the influence extends from money creation to economic development. According to Ferda (2007), the financial industry has three networks via which it might boost economic growth: (I) It raises capital's marginal competitiveness by gathering data to assess alternative ventures and exchanging risk; (ii) It improves the productivity of financial intermediation by increasing the proportion of savings channeled to investments by financial development; and (ii) it boosts the private savings rate. This viewpoint was pioneered by Schumpeter (1911) and endorsed by others. For instance, Akinboade (1998) for Botswana; Choe and Mossa (1999) for Koria; Ghali (1999) for Tunisia; King and Leiven (1999) for 80 countries; Ndikumana (2000) for Southern Africa; Shiva (2001) for Iran; Calderon and Liu (2003) for 109 countries; Odhimabo (2005) for Tanzania; Eita and Jordaan (2007) for Botswana; and others.

### 3.2.2. Demand following

The premise of this viewpoint is that economic activity leads to financial progress. According to this viewpoint, strong growth in real national income leads to an increase in enterprise demand for financial services and, as a result, financial sector expansion. Because of actual economic inflation, a financial sector expansion is caused in this situation. Robinson (1952) proposed this viewpoint, which has since been backed up by researchers such as Odhiambo (2004) for South Africa,

Thangagaveluand Jium (2004) for Australia, Hondyianand Lolos (2005) for Hondyian, and Shahnoushi, et al (2008) for Iran, and others. Patrick further introduces the stage progression theory, which states that the interaction is dependent on developmental stages. Some observational research, such as Jung (1986), which examined the causality between financial development and economic growth for 56 countries, backed up this viewpoint (19 developed and 37 developing). The findings revealed that emerging countries are more likely than developed countries to have a supply-leading causality trend, while developed countries have a demand-leading causality pattern. Apergis et al. (2007) further state that, in addition to the supply-leading and demand-leading theories, there are two other viewpoints.

The first hypothesis asserts that financial development and economic growth have a common effect. Ardic and Damar (2006) in Turkey, and Hondyian and Lolos in Hondyian and Lolos in Hondyian and Lolos in Hondyian and Lolos in Hondyian and Lo (2005). The second point of view is that financial development and economic activity are unrelated. For Turkey, Lucas (1988) and Küçüközmen (2009) affirm this viewpoint.

## 3.2. THE RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH ACCORDING TO THE ENDOGENOUS GROWTH THEORY

According to the Neo-Classical development hypothesis, capital markets can only raise saving rates, resulting in an increase in per capita national income. This increase, however, would not be lasting. Increases in the savings rate simply increase the amount of per capita GDP, but the economy does not rise with time. As a result, neoclassical growth theory fails to understand long-term growth. Endogenous growth models, such as those proposed by Romer (1986) and Rebelo (1990), allow for long-term increases in per capita national income by increases in aggregate saving rates and technical advancement.

Endogenous development theories have recently heightened anxiety about the finance-growth nexus. Endogenous growth theories claim that even in the absence of exogenous technological change, sustained economic growth can be achieved. Long-term economic growth could be achieved by combining capital accumulation, intellectual capital, and research and development activities. Although the endogenous

growth model cannot understand how poor countries catch up to rich countries at their typical steady-state stage, it is the only way to qualify the neoclassical model.

Pagano (1993) uses the AK model, the simplest endogenous growth model, to describe the potential effects of financial market creation on economic growth. The following is the production equation, where "A" is an exogenous constant and "Kt" is a capital accumulation variable:

$AK_t = Y_t (1)$

Consider the number of Q firms in a region. Each firm produces to the degree that constant returns to scale are achieved; however, efficiency is a purely increasing function of total physical capital stock Kt. Each company's individual output function is yt = kt, where yt and kt are the actual production amount and physical capital stock, respectively. Assume that is regarded as a coefficient by businesses, but that it works against average capital stock according to = Akt1-. Total output can thus be written as Y = Qyt. It is presumed that only one homogeneous good is generated for both investment and consumption purposes. To simplify the formula, the population growth rate is negative, and accumulated capital depreciates at a steady rate "" per year. As a result, the overall investment function is as follows:

It is equal to $K_{t+1} - (1 -) K_t (2)$

The economy is confronted by autarky. The equilibrium condition for the capital market is St = It, which means total saving equals total spending. In financial intermediation processes, it is presumed that a constant fraction of savings, 1 −, is lost. In that case, is the balance of the savings that is converted to investment.

The letter st is used to represent it (3) In that case, equation 1a will be used to calculate the economy's growth rate for the time t+1:

$g_{t+1} = Y_{t+1} Y_t − 1 = K_{t+1} K_t − 1 (4)$

Equation 2 can be used to demonstrate the steady-state growth rate without using the denotive of time:

$g_{t+1} = AIY − \delta = A\gamma s − \delta (5)$

Up to this point, the extraordinary point has been the rate of saving "s = S/Y," which explains how financial development influences economic growth. According to the equation, the value of 5 financial markets will rise. In a nutshell, the amount of

unused energy can be decreased, more money can be directed to investment, and the marginal production of physical and human capital can be increased with more investment. As a consequence, all of these factors can contribute to a higher saving rate.

As previously mentioned, financial development will influence growth in three ways. To begin with, capital saved by households does not always turn into savings. Financial intermediary services take a service charge of "1 –," and additional taxes and transaction costs may raise the amount taken from households. Improvements in the financial system, on the other hand, can reduce the sum of "1 –" and spur growth by making better use of savings.

Second, the financial system can boost capital "A" marginal competitiveness by detecting diverse market spaces and incentivizing entrepreneurs to engage in risky but active operations by spreading risk.

As a result, inflation will rise in lockstep with productivity.

Finally, a higher predicted profit or a lower risk level could boost savings and accelerate growth. However, the results of these factors can vary from what is predicted. For example, a higher expected return can lead to increased future and current spending, lowering the savings rate, or a lower risk level may lead to excessive investment in riskier projects and a reduction in cautionary saving.

## 3.3. THE RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH ACCORDING TO THE NEOCLASSICAL GROWTH THEORY

The effect of financial markets on economic development is described in this section of the analysis using a simplified version of the Solow (neoclassical) Model. In a neoclassical growth system, aggregate productivity is determined by total capital stock, labor, and technical development. Under the presumption of a constant rate of demographic growth and little technical innovation, economic growth is determined by improvements in capital stock accumulation. The overall capital stock and national revenue, on the other hand, do not develop in a linear fashion. Because of the expectation of declining marginal returns on capital, capital stock and national income rise over time, albeit at a slower pace. Saved money, on the other hand, depreciates at a constant pace at the end of any cycle of time.

As a result, it is unavoidable that it would be equal to the amount of money saved and depreciated at some stage. Capital accumulation comes to a halt at this stage, and the economy expands at the same pace as the population. In other words, the national salary per worker will remain unchanged. It is referred to as a Steady-State when the rate of production growth per individual is zero.

Via financial markets, the savings rate will be raised, resulting in more money available for development. Assume that the saving rate rose from s to s′ as a result of the capital markets. Equation 1 will be used to demonstrate the results of the current saving rate:

$k^{\cdot} = sy - (d + n)\, k$ (1)

Initially, as the investment rate rises, capital growth rises as well. Furthermore, as seen in Figure 6, the saving curve shifts from sy to s′y and becomes steeper.

**Figure 6:** Solowian Paradox of Thrift
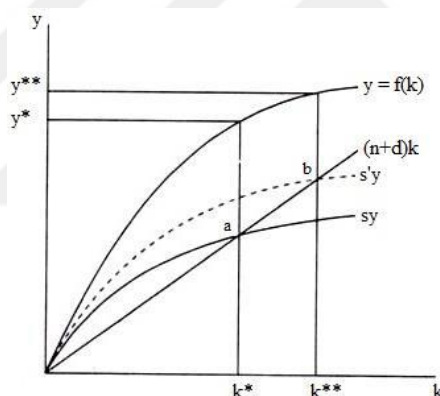


Source: Yeldan (2009), p.127

A higher level of capital and revenue per worker is achieved. Although gross production grows at a slower pace due to the declining marginal return on capital, saved capital continues to depreciate. From k* to k**, the economy invariably reaches a new Steady-State stage where the demand growth rate per individual is negative.

When the saving rate is altered, the economy moves to a new Steady-State stage (Yeldan, 2009, p.124). While physical capital and income per capita are higher than past, an improvement in the saving rate just leads to a short-term increase in economic growth rate. In comparison to the endogenous growth model, growth of country income is independent of saving rate in the long run in the neoclassical growth model.

In these conditions, financial development has a temporary positive impact on economic activity due to higher savings rates.

# CHAPTER FOUR

# FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN THE CASE OF BELARUS

In this chapter we attempts to give a clear overview on the Belarusian economy and financial system so we can explain the relationship between financial development and economic growth in the frame of our empirical study.
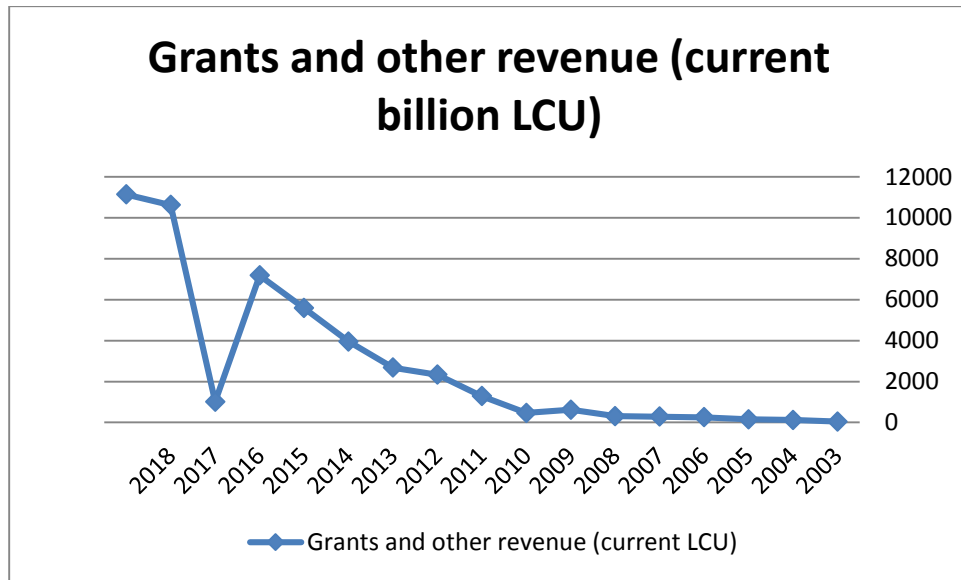
## 4.1. BELARUSIAN ECONOMIC OUTLOOK

Belarus is a transitional economy with institutional characteristics inherited from the former Soviet Union. Belarus is largely reliant on Russia, its main trade partner, and to a lesser degree on Ukraine, whose economic and political condition has had a negative impact on Belarus' economy in recent years. Belarus has historically purchased gas and oil from Russia at a discounted price, and its expansion has been fueled in part by the re-export of Russian oil at market prices. The private sector has grown slowly since the collapse of the Soviet bloc. According to the World Bank, massive subsidies to state-owned companies would no longer be able to boost GDP growth in the near term. Statistics from the world bank show that as a result of financial crisis of 2011, the country's GDP was expected to have declined by 3% in 2020. The IMF predicts a turnaround to 2.2 percent this year and 2 percent in 2022 as the situation stabilizes, though there is still doubt about the pandemic's trajectory, as well as the post-election political turmoil that marked the world in 2020.

After the financial crisis of 2011, Belarus' economy has been plagued by significant internal and external imbalances, and it is heavily dependent on Russian loans. As a result, the economy is increasingly vulnerable to external shocks, and the Russian currency's decline is having a negative effect. The country remains dependent on Ukraine and is subject to price volatility. The price of gas has increased and the amount of oil exported has declined as a result of the United States' failure to recognize Russia's annexation of Crimea. In terms of public finances, government revenues in 2017 dropped to 80% of the annual target, with a BYN 0.6 billion central state budget deficit from January to December 2017. The debt-to-GDP ratio rose in 2018, reaching an estimated 46.9 percent, after falling to 41.9 percent in 2017. Although Fitch Ratings has downgraded Belarus' long-term foreign-currency issuer default rate (IDR) from "stable" to "negative" and held the IDR at "B," the IMF expects a downward trend in

2021 and 2022. (48.6 percent and 48.2 percent, respectively). One of the problems with the debt is that about a third of it is held in foreign currency, putting the Belarusian ruble at risk of depreciation. Inflation has been relatively steady in recent years, and it is projected to stay about 5% in the forecasted period.

**Figure -7**. grants and other revenue (2003- 2018)



Source: IMF – World Economic Outlook Database, 2020

Belarus has a low rate of poverty and inequality, according to the most recent World Bank reports, with a poverty rate of 2.7 percent in 2018 (though the BEROC Economic Research Center reported that 21.5 percent of the total population lived in poverty in 2006, with the Mahiliou region being the poorest) (see figure 8).

**Figure- 8**. poverty ratio (2003-2018)
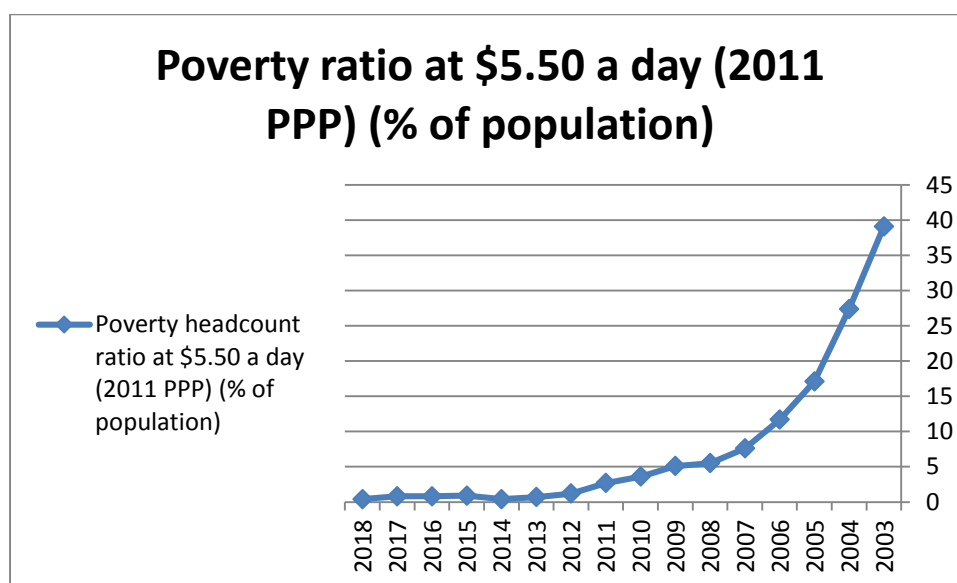


Source: IMF – World Economic Outlook Database,  2020

The country's transition to a market economy and democracy, however, has been uneven, and the country's current economic and political instability threatens to deepen the wealth gap. Labor force participation rate increased to 78.22 percent in 2018 (up from 0.9 percent the year before) and is expected to fall quickly in the coming years.

Belarus' economic progress was mostly influenced by external causes. Energy, trade, and money flows from Russia have formed a steady economic growth trajectory.

Significant capital boosted Belarus' economy from the year 2003 to 2018 according to world bank data, particularly between 2016 and 2018. Foreign direct investment (made up largely of reinvested earnings) accounted for a portion of these inflows, while borrowing accounted for the rest (other investment). The increasing disparity between the proportions of imports and exports in GDP (see table 3) and the significant rise in import prices represent the inverse of this trend.

The current account balance has worsened as a percentage of GDP. (From 2003 to 2018, the average was 9.5 percent of GDP). While the bulk of capital inflows supported higher imports, reducing the stimulus' multiplier effect on the local economy, the inflows also stimulated aggregate demand, especially in construction and services.

**Table 3.** Main Indicators in Belarusian Economic between 2003-2018 (unit : 1 billion )

| 2018 | 2016 | 2014 | 2011 | 2007 | 2003 | |
|---|---|---|---|---|---|---|
| 5.02 | -12.17 | -5.55 | 7.81 | 16.35 | 25.85 | s capital formation (annual % growth) |
| 43034.00 | 40441.00 | 32350.00 | 11099.00 | 2614.00 | 810.0 | lomestic credit (current LCU) |
| 42267.00 | 29983.00 | 43375.00 | 46580.00 | 26872.0 | 10881 | rts of goods and services (BoP, current US$) |
| 68.94 | 62.70 | 55.71 | 79.51 | 67.21 | 68.99 | rts of goods and services (% of GDP) |
| 929.00 | -880.00 | -444.00 | -119.00 | -281.00 | -692.0 | rade in goods and services (BoP, current US$) |
| 18885.24 | 17822.61 | 19066.89 | 18251.78 | 14417.3 | 9660. | per capita |
| 3.80 | 2.60 | 4.57 | 30.40 | 5.60 | 8.59 | rts of goods and services (annual % growth) |
| | 0.81 | 1.05 | 0.94 | 3.16 | 2.24 | nvestment in nonfinancial assets (% of GDP) |
| -200.00 | 0.00 | 0.00 | 780.00 | 19.00 | | olio investment, bonds (PPG + PNG) (NFL, current US$) |
| 3.31 | -2.65 | 1.63 | 5.57 | 9.10 | 7.79 | per capita growth (annual %) |
| 4.33 | 1.51 | 0.65 | 9.48 | 3.90 | 0.20 | icquisition of financial assets (% of GDP) |
| 43451.00 | 30599.00 | 44203.00 | 47242.00 | 27148.0 | 11007 | rts of goods, services and primary income (BoP, current US$) |
| -1371.00 | -1124.00 | -1788.00 | -3876.00 | -179.00 | -170.0 | gn direct investment, net (BoP, current US$) |
| 78.20 | 77.46 | 76.83 | 75.50 | 74.04 | 72.19 | r force participation rate, total |
| 7.30 | -1.40 | 2.01 | 18.50 | 7.33 | 13.40 | rts of goods and services (annual % growth) |
| 27.61 | 25.72 | 23.63 | 37.96 | 24.80 | | estic credit to private sector (% of GDP) |
| 20.00 | 6.00 | 7.00 | 4.00 | 0.10 | 0.00 | capital account (BoP, current US$) |
| | 767.00 | 845.00 | 290.00 | 307.00 | 81.00 | nvestment in nonfinancial assets (current LCU) |
| 22972.00 | 20150.00 | 28074.00 | 29314.00 | 18430.0 | 8180. | s capital formation (constant LCU) |
| 70.46 | 62.51 | 54.94 | 78.47 | 60.94 | 65.16 | rts of goods and services (% of GDP) |
| 23.09 | 21.68 | 22.11 | 37.27 | 23.66 | 11.71 | estic credit to private sector by banks (% of GDP) |

Source: World Bank, 2018

The banking credit to private sector by banks multiplier magnified the impact of capital inflows on the economy. Commercial banks held by the government primarily backed state-owned firms in agriculture, manufacturing, and services (figure 9). The credit-to-private sector by banks (% of GDP) ratio peaked in 2010 and has yet to return to that level as of 2018.

**Figure 9.** credit to private sector by banks
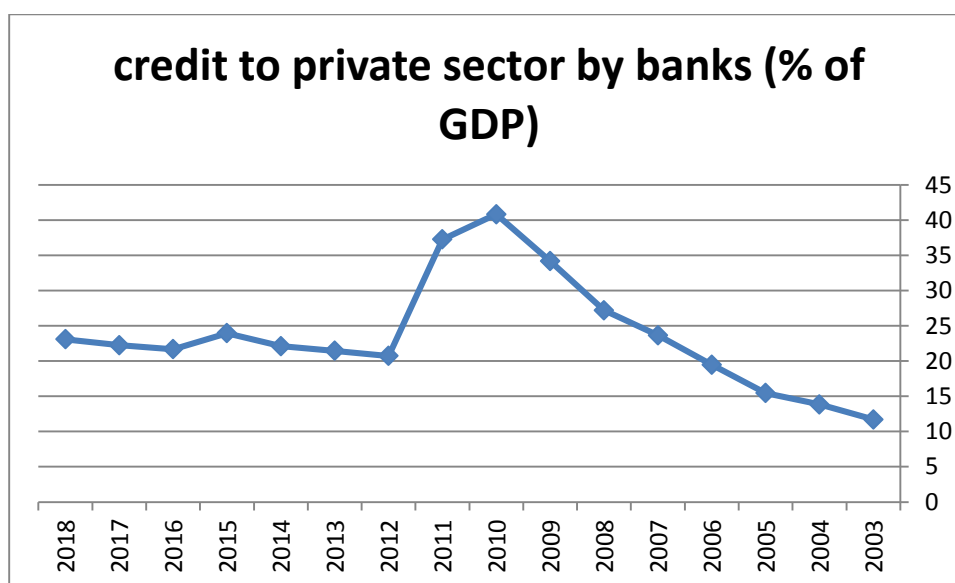


Source: World Bank,2020

### 4.1.1. Main Sectors of Industry

Belarus has a diverse range of natural resources, including timber, minerals, a few minor oil and gas deposits, granite, limestone, clay, sand, peat, and dolomite. Agriculture employs 11% of the working population and accounts for 6.8% of the country's GDP (World Bank, 2018). Beef and pork, eggs, milk, and cereals are the primary agricultural products (including potatoes, vegetables, cucurbits and seeds). Belarus produces the third-largest amount of rye and flax fiber in the world. In addition, the country is the world's seventh-largest butter exporter, eighth-largest chicken exporter, and 12th-largest cheese exporter. Agriculture is dominated by highly subsidized state-owned cooperative farms inherited from kolkhozes, which account for approximately 60% of total production. (The Soviet Union's agricultural policy was based on communal farms). Belarusian agriculture is heavily reliant on the Russian economy, exporting almost all of its agricultural goods to Russia. According to Belstat, total agricultural production rose by 4.7 percent in 2018.

The sector generates 31.3 percent of the country's GDP and employs 30% of the working population. Belarus, as a former Soviet republic, has a developed, though aging, industrial base that is heavily subsidized. Power machines, farm machinery, fertilizers, petroleum and chemical materials, and food products are the major industries (including beverages and tobacco), Building products, automobiles, textiles,

and household goods appliances are all prefabricated (such as refrigerators, watches, televisions and radios).

According to the World Bank, the industrial sector accounts for 21% of the country's GDP, owing primarily to the production of food and coke and refined petroleum products. Belstat estimates that 26.4 percent and 13.1% of overall industrial production will be produced in 2018. Despite the financial crises 2011, official statistics show that industrial output dropped by just 0.7 percent in 2018 relative to the previous year.

The tertiary sector accounts for 48.8% of GDP, a significant increase since the dissolution of the Soviet Union. Services recruit 59 percent of the working population. The fastest-growing industries are information technology, transportation, and logistics. According to Belstat, wholesale turnover increased by 4.2 percent year over year in 2018, while retail turnover fell by 1.8 percent (see table 4).

**Table.4** Belarusian economic activity by sector in 2018

| Breakdown of Economic Activity By Sector | Agriculture | Industry | Services |
|---|---|---|---|
| **Employment by Sector (in % of Total Employment)** | 111 | 30 | 559 |
| **Value Added (in % of GDP)** | 66.8 | 31.3 | 448. 4 |
| **Value Added (Annual % Change)** | 00.4 | 0.7 | 00.9 |

Source: World Bank, Latest Available Data. Because of rounding, the sum of the percentages may be smaller/greater than 100%.

## 4.2. FINANCIAL SYSTEM DEVELOPMENT IN BELARUS:

Belarus, a middle-income nation in Eastern Europe, has had some success in providing financial services to underserved populations. Government initiatives have been implemented over the past decade to encourage more consumers, investors, and small businesses to participate in the formal financial system. This has resulted in a relatively well-developed financial infrastructure, especially for urban consumers and financial institutions launching new products and services. In Belarus, most workers now deposit payments directly into their bank accounts, and they frequently have access to a variety of other basic financial services.

- Capital coverage exceeds regulatory requirements. Profitability will be bolstered by current loan growth and lower funding costs.

**Figure 10.** banking sector profit in Belarus between 2014-2018



Source: central banks and national statistical committees, Belarus .2019

- Belarus experienced a rapid domestic credit expansion (% GDP) from 2 percent to 45 percent of GDP between 2003 and 2018. However, in 2011, the economy's exchange rate shifted due to the crisis. In 2011, the banking industry witnessed a surge in deposit growth rates. State-led efforts to boost banking system liquidity reflected this massive increase. The exchange rate has remained stable in a relatively flexible environment, and reserve assets have remained stable, with recent positive developments (see figure 11).

## Domestic credit provided by financial sector (% of GDP)

*(Chart: Domestic credit provided by financial sector (% of GDP), years 2017 to 2003 on x-axis, values 0 to 60 on y-axis. Legend: Domestic credit provided by financial sector (% of GDP).)*
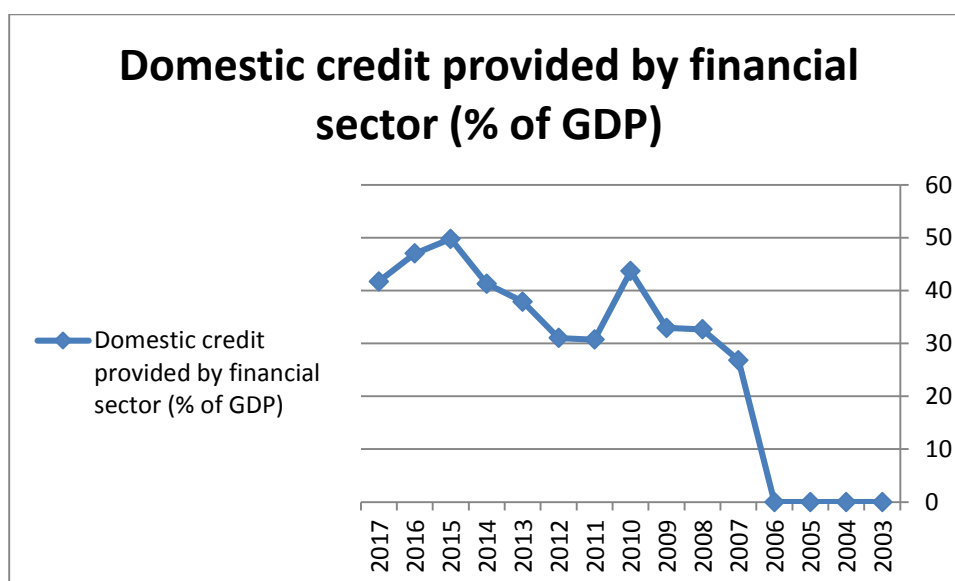
Source: World Bank, 2020

After 2011, the loan-to-deposit ratio fell, which was attributed to a slowdown in credit growth. Loan growth turned positive in 2018 after nearly two years of contraction. The most complex has been retail credit (cars, housing and consumer loans) Corporate credit to private companies has become more dynamic than corporate credit to public companies. FX's share of corporate lending has dipped marginally to 57 percent. Some niche players are expanding SME services, while credit guided through state programs is steadily dwindling.

- Financial intermediation remains strong, accounting for 42 percent of total domestic credit-to-GDP in 2018. Furthermore, domestic credit to the private sector accounted for 24.9% of GDP in 2018.

- Credit growth resumed in the first quarter of 2018, fueled largely by private sector credit growth, with the banking sector growing at a faster pace. However, by common standards, it is still poor.

In Belarus, the main danger stems from the country's high dollarization. Despite the NBRB's imposition of the net open currency limit, the banking system remains vulnerable to the risks associated with lower exchange rates. In 2018, foreign-currency denominated loans accounted for about 56 percent of total loans, while foreign currency deposits accounted for 70 percent.

**Figure 12.** bank liquid reserves to bank assets

**Bank liquid reserves to bank assets ratio (%)**
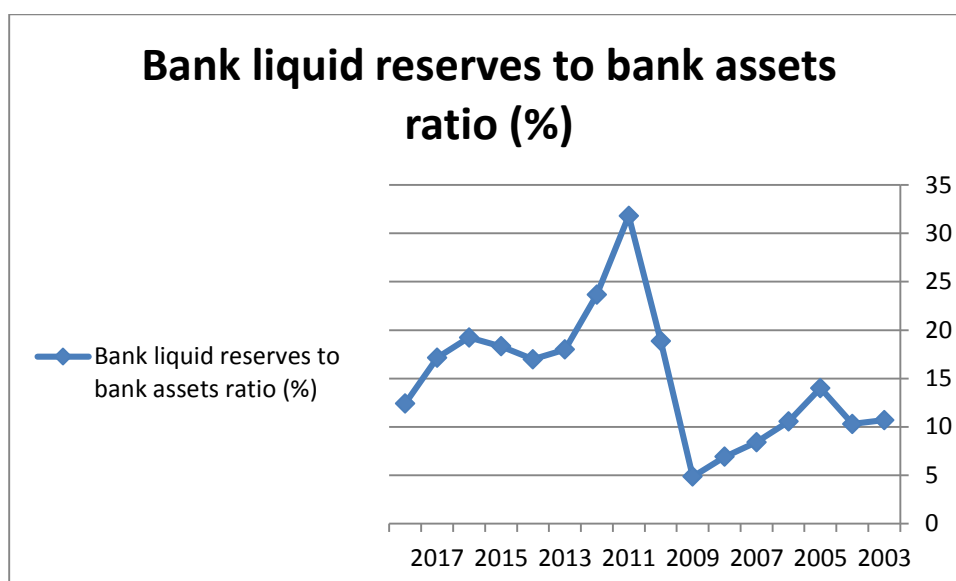
Source: World Bank, 2020

The state-owned stock exchange JSC "Belarusian Currency and Stock Exchange" measures the capital market in Belarus. It plays a minor role in the overall economy, and trading is largely illiquid.

In Belarus, leasing has been growing for the past three years, with assets accounting for 3.2 percent of total financial assets in 2018. Microfinance operations, including leasing, are supervised by the NBRB. Total assets in the microfinance sector accounted for a very limited portion of total financial assets as of January 2018. The sector is still heavily dominated by the state, with state-owned Belarus bank, Belagroprom bank, and Belinvest bank holding a combined market share of over 60%.

Despite improved access to financial services, the use of these services by individuals and companies remains poor. The current system is helpful in catalyzing a financial services industry, but more work needs to be done to improve the country's financial infrastructure and encourage the production of goods and services that consumers can use in large quantities.

Belarus does not have clear laws or legislation that specifically promote access to finance, which is an important factor. Until now, all efforts have been concentrated on macro-level financial system growth, with a greater emphasis on infrastructure modernization. These efforts have yielded some results, but Belarus' first and most

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critical challenge is to develop a financial infrastructure that provides widespread access to accessible and efficient financial services.

To achieve progress in this area, the National Bank of Belarus (NBB) and the ministries of Finance, Economy, and Labor, as well as the Ministry of Social Protection, have pledged to reassess their future policies in order to make access to finance simpler, larger, and faster.

Their shared aim is to match policy interventions to the market's needs, which include a greater understanding of how to use financial services. There is a scarcity of data and evidence on policies, priorities, and regulations that facilitate data access and use, prompting attempts to collect information on why, how, and to what degree individuals and businesses use financial services. This evidence-based approach would aid in the development of a regulatory system that protects consumers while also stimulating innovation by encouraging financial institutions to improve the quality of their services. The research is also expected to yield results in a comprehensive national plan for improving access, including current laws.

## 4.3. BELARUSIAN ECONOMY AND ECONOMIC GROWTH

Belarus' economy is classified as a "tiny open economy" by the international community. And this idiom refers to "an economy that participates in foreign trade but is limited as compared to its trading partners, and whose policies do not align with global markets, interest rates, or incomes. As a result, small open markets function as price takers." As we can see from the concept, it is primarily concerned with trade flows; nevertheless, contemporary small open economies are considered to be a part of the global economy not just through trade but also through capital flows (EBRD, 2011).

Belarus is the 88th freest economy in the 2018 Index, with an overall economic freedom score of 61.7. Its total score has climbed by 3.8 points as a result of stronger scores for fiscal health and financial independence. Belarus is placed 41st out of 45 European countries, with a growth rate that is much lower than the regional norm and just slightly higher than the worldwide average. Despite its political challenges, Belarus has seen a rise in economic freedom over the previous five years. The economy was rated as fairly free for the first time in 2018. In any event, due to the ongoing recovery from the recession and commodity price weakness in 2015–2016,

GDP growth has yet to catch up. With rising global oil prices and increased Russian demand for Belarusian manufactured goods, the authorities have an opportunity to introduce further reform measures to improve judicial effectiveness and government legitimacy, which will help to increase economic freedom the GDP return to rises in 2016 until 2020 with 3.8 % ratio in 2018 (see figure 13).

**Figure 13**. GDP per capita growth
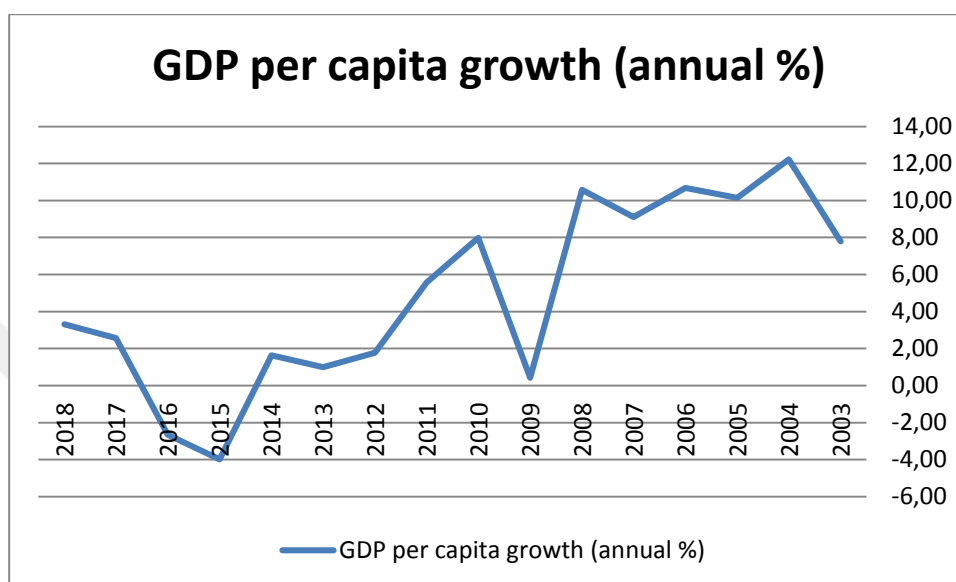


Source: World Bank, 2020

Many Belarusians referred to the country's economic development in the 2000s as an "economic miracle." Indeed, the growth rates were high, often exceeding 10% per year. Growth was pro-poor, with the poverty rate falling from 47 percent in 1999 to 5 percent in 2010.Even the recent crisis did not hurt Belarusian economy much: in 2009 the growth rate was close to zero, but still positive (Haiduk, 2013).

Belarus did not go through a complete privatization process, and many key businesses are still owned or controlled by the government. Until recently, it also did not devote enough time to the reform of the private system. Belarus would also struggle to gain significant amounts of foreign investment. In the period 2001-2010, foreign sources contributed just 3.48 percent of total investment. Despite Belarus's remarkable development, there is little literature on growth in Belarus, to the best of our knowledge. The Belarusian economy does not respond to external crises in a traditional way (Haiduk, 2013).

Foreign direct investments (FDI) have not been a significant item of the financial account for a variety of reasons. Furthermore, until recently, other "traditional" capital flows were not as significant for Belarus. The study of the Belarusian balance of payments reveals this (BOP).

Traditional sources of foreign capital (loans from the financial and non-financial sectors) are being gradually replaced by government borrowings and commercial credits in the Belarusian economy. Government borrowing in Belarus is primarily dependent on bilateral intergovernmental loans and has no direct link to market trends.Commercial credits are commonly associated with export-import purchases that are only used for a limited period of time.

As a result, the state of the capital markets has a significant impact on this form of financial flow (Lisovskaia, 2002). As a result, the Belarusian economy's reliance on the global economy is much greater, relying solely on trade flows rather than financial flows.

**4.3.1. Trade flows (current account)**

Different market conditions (changing prices) may have two effects on the Belarusian economy. First, if the price adjustment is favorable to the sector, it would result in an increase in export sales. Secondary, in the event of adverse price dynamics, export sales would be reduced, either by physical size reduction or price change. In the case of imports, the procedure is reversed.

As a result, the first connection to the Belarusian economy is the patterns of export profits and import costs, i.e. the shift in the trade balance as a result of global financial crises. In any case, when evaluating a given industry, we must consider all exports and imports. While the majority of Belarusian exporters see a positive impact on their exports, they do not see a positive impact on necessary imports. This is due to Belarusian manufacturers' and laws' high reliance on imported raw materials and intermediate products .

**Figure 14.** net trade in goods and services

## Net trade in goods and services (BoP, current 1million US$)
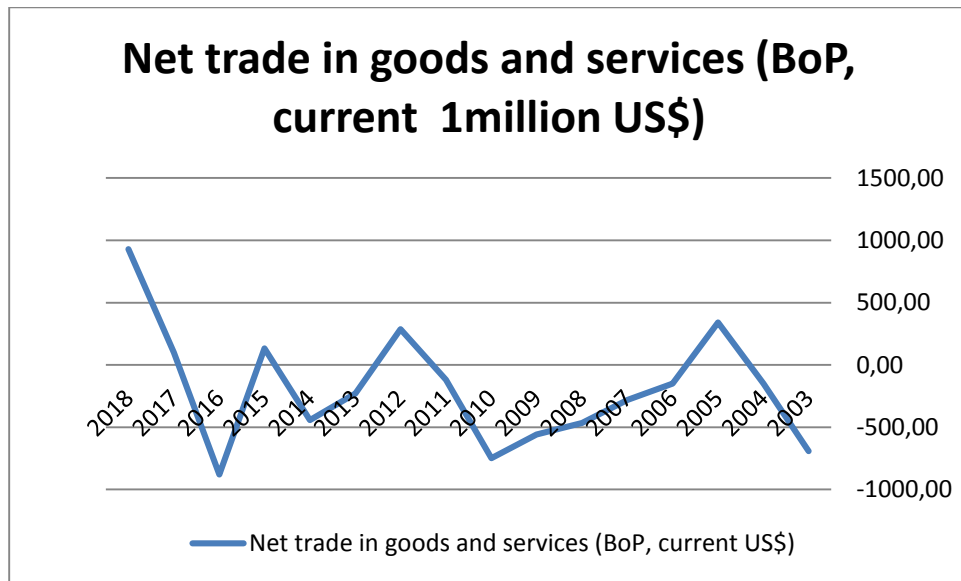


Source: World Bank, 2020

In 2018, net trade in goods and services for Belarus was 493 million US dollars. Though Belarus net trade in goods and services fluctuated substantially in recent years, it tended to increase through 2016 - 2018 period ending at 493 million US dollars in 2018 (see figure 14).

Aside from crude, the Belarusian economy relies on companies that deal with other raw materials and intermediate products. There is reason to believe that, like the oil and oil refinery sectors, world prices in these markets would be influenced by global financial distress. Ferrous metals and potash fertilizers are of particular concern in the merchandise types.

The situation in the ferrous metals market is more analogous to the oil and oil refining sector in terms of trade balance.

In any case, it's more difficult because I the manufacturing line in this industry is longer and more complex, (ii) the proportion of necessary raw materials to industry output fluctuates, and (iii) a large portion of imported ferrous metals is used as intermediate goods by other industries rather than as raw materials by the Belarusian ferrous metal industry (Arestis, 2002).However, if the global price of ferrous metals, like the price of oil, is influenced by global market financial trends, trade with this

merchandize culture may be the second connection between the world and the Belarusian economy.

**4.3.2. Financial flows (financial account)**

When Belarus faced a price crisis relating to Russian energy supplies in 2007, the need to raise capital from abroad grew significantly.

That was due to the significant increase in the trade balance deficit, as well as the policy challenge of maintaining the exchange rate peg. In 2007, the authority's strategy resulted in a significant increase in core financial flows relative to 2006. Over 2007, key net inflows of capital were FDI, borrowings by the authority and monetary authorities, and commercial credits by non-financial sector (12.2 percent of GDP on a gross-basis). Furthermore, 2007 was the year in which the foreign debt was most actively accumulated (capital flows other than FDI). It nearly doubled to USD 12.7 billion in 2007, with a growth rate of 87.4%, while the foreign investment situation deteriorated by 45.2 percent to USD -8.2 billion.

The patterns of capital flows are largely determined by local market conditions, with only a minor influence from global money and capital market conditions. (Levine, R. 2011).

FDI is primarily dependent on government decisions regarding privatization transactions. Governments, for their part, seem to be making privatization decisions in the absence of other streams of capital inflow. In any case, the investor perspective is crucial. For example, an investor's risk perception influences his or her decision to enter or exit the market. Furthermore, the price that the investor is willing to pay is determined by the foreign event. So, at this stage, with a minimal number of privatization transactions, we may argue that stable links between the global economy and the Belarusian economy dependent on FDI flows seem to be improbable. Second, the authority's borrowings are mostly influenced by political considerations rather than market conditions. Belarus has yet to respond to public borrowings on the international capital market, after receiving sovereign credit scores in July 2007. As a result, the money balance in Belarus is unaffected by the global financial crisis (TACIS,2012).

Third, economic credits are primarily short-term and are issued by trading partners to one another. Despite the fact that the terms of such loans can be influenced by stock market factors (e.g., the interest rate, the duration of the payment delay, etc.),

their aggregate availability does not seem to be directly linked to these trends .Furthermore, since these credits are typically short-term, it provides the impression that the accumulation of unpaid liabilities cannot escalate dramatically over the course of more than a year, while even in the case of attracting new credits, borrowers must repay previously issued credits (Hermes, N. and Lensink, R. 2009). Hence this flow cannot be interpreted as a consistent capital flow that is not influenced by global market patterns. As a result, it's difficult to tell if the Belarusian economy is being more financially integrated with the rest of the world, given that a significant portion of this capital has been attracted either for short-term goals by foreign purchases or for intergovernmental loans. (Pissarides, F. 2001),.

Financial flows that are severely influenced by global market conditions are mostly restricted by loans from international banks, which are made by either Belarusian banks or real-estate enterprises. Belarusians have been borrowing from abroad more often in the last three years.

International financing is used by both financial (banks) and non-financial (non-banking) agents in roughly equal proportions (if considering outstanding claims). Commercial banks, on the other hand, can be thought of as more aggressive and critical creditors.

They mostly deal with short-term loans (up to and including one year) in response to the overall economy's need for increased foreign currency inflow.

Belarus' cyclical economic rebound has continued, with demand and exports both increasing. Stronger domestic demand and higher exports helped GDP rise for six quarters in a row, to 3.9 percent in Q2 2018. Throughout the second half of 2017 and into 2018, real incomes increased, outpacing productivity growth, boosting household demand, which increased by 10.2% y/y in Q2 2018.

On the supply side, a resurgence in commodity-intensive industries was driving demand. Mineral exporters, metals exporters, and wood exporters all grew in size and sales as trading terms improved with non-CIS countries. A slow and erratic recovery in Russia, on the other hand, has reduced prospects for increased manufacturing and agricultural exports. Furthermore, bilateral import sanctions levied by Russia on a regular basis had a negative impact on dairy exporters.        Meanwhile, the private sector's financials continue to deteriorate. Manufacturing and construction revenues

plummeted in real terms in the first half of 2018, although the number of loss-making State-Owned Enterprises (SOEs) in these sectors decreased just slightly.

Despite high levels of indebtedness in 2017 (the ratio of assets subject to credit risk to total sectorial value added was 69.4%) and a higher share of assets subject to credit risk (22.6%) than other primary sectors of the economy, commercial banks increased lending to manufacturing firms at a rate comparable to sectorial output growth.

Because of strong tax collections, consolidated government revenues increased significantly. To satisfy the public debt payments (up 2.4 percent in real terms in H1 2018), spending on public investment and transfers to local governments is reduced, resulting in a headline fiscal surplus of 5.5 percent of GDP (net of quasi-fiscal expenditures). In either case, public debt strains persist, with the Central government debt -to-GDP ratio reaching 39.8% in Q2 2018. The national debt to GDP ratio rises to 51.2 percent as an expanded concept of foreign public debt is used. The National Bank will continue to use monetary targeting to keep inflation in single digits. Inflation eased to 11% in 2016, and then to 4.9 percent by September 2018, though it had accelerated from 4.7 percent in the first half of 2018.

As inflation pressures subsided, the real interest rate was gradually reduced from 5.5 percent in 2017 to 3% by May 2018.As a result, lending rates plummeted, boosting credit supply and stimulating bank lending, which increased by around 11.5 percent in nominal terms year over year by mid-2018. Still, with 67.2 percent of deposits denominated in foreign currency, the degree of dollarization remained high, although the currency portion of large money fell from nearly 66 percent to 62 percent by Q2 2018.In either case, the economy's overall "issue asset" ratio of 13% (as of April 1, 2018) (see table 5).

**Table 5.** Some of indicators of the Belarusian economy between 2003- 2018

| 2018 | 2016 | 2013 | 2010 | 2007 | 2003 | |
|---|---|---|---|---|---|---|
| 4.872 3 | 11.8 36 | 18.31 2 | 7.735 7 | 8.4267 | 28.397 | Inflation, consumer prices (annual %) |
| 7.183 6 | 5.56 86 | 5.857 7 | 12.70 6 | 9.9068 | 10.635 | Taxes on income, profits and capital gains (% of total taxes) |
| - 3.070 6 | 5.59 16 | - 1.751 6 | - 1.863 4 | - 3.8075 | - 5.1347 | Real interest rate (%) |
| 14.30 7 | 19.6 08 | 6.642 6 | 0.855 9 | 8.3058 | 25.591 | Multilateral debt service (% of public and publicly guaranteed debt service) |
| 39.96 | 37.5 98 | 24.54 | 24.42 | 18.557 46 | 6.5702 21 | Central government debt, total (% of GDP) |

Source: World Bank, 2020

The medium-term economic outlook is threatened by both external and internal influences. The economy's public debt, which is equivalent to 40% of GDP, remains the main obstacle to achieving stable and sustainable growth. Although bilateral agreements with Russia, one of the major creditors, have aided in the acquisition of significant external funding, this only provides short-term relief. Internal risks include the slow speed of real-economy improvement and a return to expansionary policies to boost internal demand, especially in the run-up to parliamentary and presidential elections. The possibility of a cascade of interconnected issues in SOEs and commercial banks is something to be concerned about. More structural interventions, such as setting in place a workable Non-Performing Loan settlement mechanism to reduce the economy's overall "issue assets" ratio from the existing 13%, are needed to offset these risks. Continued on a case-by-case basis Due to over-optimism about the prospects of poorly performing enterprises, debt rescheduling of SOEs' debts could raise fiscal risks.

The main challenge is to figure out how to move from cyclical to systemic recovery. Long-term development is contingent on capital allocation performance, the ease with which one can do business, the prospects for investment, and trust in government institutions making progress in these fields would help to alleviate current transition issues and avoid secular stagnation. Social tensions are almost often exacerbated by structural economic and technical advancements, but they may be mitigated by appropriate policies and organizations. (Greene, W. 2000).

The emergence of distributional tensions in Europe and Central Asia, including intergenerational and spatial divisions, is discussed in a private topic titled "Addressing Distributional Inequalities." Redesigning the coverage of social welfare services will help to overcome rising economic instability, along with a reliance on growth-promoting, spatially agnostic economic policies

The flow of attracted loans by Belarusian banks has been steadily rising over the last three years. Almost all of these loans are made by a group of international banks, as is customary in the global economy. In terms of the organization, their loans can be on a longer-term basis, but they are primarily tied to their own international trading agreements. Furthermore, these loans can be a part of a foreign exchange arrangement in some cases, assuming the main transaction is accompanied by the awarding of loans by a foreign bank associated with the counterpart of the Belarusian citizen (Greene, W. 2000).

When considering the allocation of borrowed funds by the countries of origin of bank-lenders, it is clear that Belarusians mostly trade on the Austrian and German banking markets. At this point, we may conclude that withdrawing funds from international banks, both financial and non-financial, has become less necessary for Belarusian citizens. As a result, changing conditions of access to foreign capital and lending conditions as a result of international financial distress could affect this important source of BOP financing (Honohan, P. 2006). As a result, from a macroeconomic standpoint, it may have an effect on the domestic currency market and may result in a reduction in foreign currency supply. From a micro perspective, it could have a negative impact on Belarusian banks' lending capabilities and risk appetite.

Belarus' economy has chosen to move away from being the USSR's "assembly line" in order to turn into a socially focused and highly competitive export-oriented economy during its independence years. (Lisovskaia , 2002).

The governments of these countries have not only been able to preserve their economic potential and trademarks, but have also sought to expand them by introducing new lines of highly competitive goods, making the "made in Belarus" brand stand out in many foreign markets. Belarus has maintained the continuity of its economic model over the years. The nation has survived the big upheavals experienced by many post-Soviet countries by following an evolutionary course of growth, non-shock changes, and a steady return to market economy concepts.

The development of the Belarusian economy is also due in large part to the fact that technology has played an active role in resolving real-world issues.

# CHAPTER FIVE

# METHODOLOGY AND EMPIRICAL RESULTS

## 5.1. PURPOSE OF THE STUDY

This paper aims to examine the impact of financial intermediation on economic growth in Belarus. Time series data from 2003 to 2018 were used and were gathered from World Bank data and Belarusian government statistics. To study interrelationships between variables in the VAR system, the Vector Auto regression (VAR) technique and Innovation accounting (variance decomposition with impulse response technique) analysis are used, which varies from the normal approach or technique in general.

## 5.2. IMPORTANCE OF THE STUDY

Post-socialist economies began liberalizing their financial sectors in the late 1990s. The goal was to secure a smooth transition from a centrally planned system to a market economy by creating competitive financial markets quickly and without government involvement.While most of the transition economies had made significant progress in liberalising their economies by the second half of the 1990s, Belarusian authorities abandoned this method in 1996, expecting the social and political implications of economic liberalization, and reestablished a widespread state control over the economy, putting banking sector repression at the center of economic policies. This thesis examines the  realtionships between financial development and economic growth and shows us how can financial development leads economic growth

Belarus's story is particularly interesting since, despite no economic reorganization, the Belarusian economy has expanded by an average of 7% each year since 1997. While there are several theories for this "miracle," no empirical research on the function of the financial system in economic development, particularly the impacts of total credit and investment in the financial system, has been done.

## 5.3. METHODOLOGY AND EMPIRICAL STUDY

This study uses a VAR modeling approach to represent the link between financial development and economic growth, which eliminates the limitations of endogeneity and variable convergence. It differs from previous Granger causality research in that it analyzes causality in the finance-growth relationship using the innovation accounting technique (variance decomposition and Granger causality).

In this study, we utilize variance decomposition to break down the variance of forecast errors for economic growth, namely GDP growth, into components that may be applied to any other variable, such as total credit growth (TCG).If total credit explains more variance within prediction errors for economic growth than other variables, we will find evidence for the theory that financial factors generate economic development. Similarly, we will discover evidence for the notion that economic growth Granger influences financial advancement if the economic growth indicator provides more information about the variety in total credit prediction mistakes.

The specific VAR model in which the innovation accounting approach is applied is motivated by Feder's two-sector model for exports and development. This study attempts to present a complex structure based on production function theory that incorporates two sectors (financial and real), as well as financial growth, external transparency, and factor inputs.

As a result, the VAR model proposed in this study considers components such as labor, physical capital or resources, the exchange sector, and a monetary element (e.g., total credit, deriving from the theory of money in the production function). Wang (2000), Sawada (2000), Evans (2000), Murinde (2000), and Evans (2000) all use a similar strategy (2002).

The rate of change in real GDP is defined as economic growth (EG), whereas the rate of change in net investment is defined as investment (INV). We believe that opening up to global commerce would assist improve economic growth by increasing local businesses' markets and allowing them to buy inputs at international pricing, according to contemporary growth theory. To quantify openness, we utilize the rate of change of the exchange ratio we mean (TRA), which is defined as the ratio of imports

and exports to GDP. Because economic production is dependent on inputs, including labor, we also incorporate the rate of change in the labor force (LAB) in the model.

Financial growth indicators can be measured in a variety of ways, according to the literature. Sims (1972), Levine (1993), and Cole (1995) employed monetary aggregates such as M2 or M3 stated as a proportion of GDP. Because GDP is included in both target variables, Hussein (1996) and Levine and Zervos (1998) questioned whether it was possible to test the premise that financial advancement "leads" economic growth using such a variable.

Juttner (1994) argued that "credit generation does not necessarily need money creation and vice versa" in his argument against using monetary aggregates to evaluate financial expansion. This indicates that if the goal is to figure out how financial development effects economic growth, M2/GDP and M3/GDP aren't suitable indices of financial advancement.M3/GDP "does not compute whether the liabilities are those of banks, the central bank, or other financial intermediaries, nor does this financial depth measure identify where the financial system allocates capital," according to Zervos (1998).In other words, they claim that, despite the fact that credit is clearly one of the aspects of financial advancement that can contribute to economic growth, growing M3/GDP does not automatically imply increased credit.

## 5.3. 1. Empirical Results

The ADF, PP, and KPSS unit root tests are used to determine if the variables in the research are stationary. Because it is well known that the amount of delays used in these experiments affects the findings, extra attention must be made to the lag length selection. In this study, the lag duration for ADF tests is based on Schwartz's Information Criteria (SIC), while the maximum band for PP and KPSS is based on Newey's Information Criteria (1994). Table 6 displays the results of the unit root testing. GDP is stable on a level according to the PP and KPSS tests, however the null hypothesis of unit root could not be rejected in the ADF test. Nevertheless, GDP is taken as I(0)., variables are stationary on level.

**Table 6**: Results of the Unit Root

| Variable | ADF | | PP | | KPSS | |
|---|---|---|---|---|---|---|
| | Without Trend | With Trend | Without Trend | With Trend | Without Trend | With Trend |
| $GD_t$ | -0.14 | -1.54 | -5.12*** | -6.69*** | 0.15 | 0.12 |
| $TC_t$ | -1,24 | -4.87*** | -1.88 | -3.78** | 0.79*** | 0.12 |
| $NIV\tau$ | -4.12*** | -4.44*** | -4.17*** | -4.89*** | 0.51* | 0.13 |
| $LAB_t$ | -1.68 | -3.64** | -1.53 | -3.49** | 0.78*** | 0.07 |
| $LAB_t$ | -2.13 | -4.75*** | -1.28 | -2.77 | 0.69** | 0.15* |
| $CAP\tau$ | -3.53** | -4.56*** | -3.28** | -4.49*** | 0.67** | 0.13* |

*Where \*, \*\*, \*\*\* mean non-stationary at 10%, 5%, and 1% significance level.*

The next step is to create and estimate a VAR model that is appropriate for your situation. In VAR models, variables are employed at their stationary level. The first step in estimating the VAR model is to figure out what the best lag length order is. This is essential because under-parametrization can cause results to be skewed, while over-parametrization can reduce test power. Sequential Modified Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), and Hannan-Quinn Information Criterion (HQ) are used to choose the lag duration of the VAR model. Table 7 shows the selected lag duration for each model criterion. Except for the LR criterion, all other criteria for the model are set to 10 lag, therefore the VAR lag length for the model is set to 10.

**Table 7:** the results of Lag Length Order Selection Criteria

| Lag | LR | FPE | AIC | SC | HQ |
|-----|-----|-----|-----|-----|-----|
| 0 | NA | 9.79E-09 | -9.943564 | -9.787459 | -9.867986 |
| 1 | 51.75476 | 3.53E-09 | -11.97546 | -10.23502 | -10.76587 |
| 2 | 65.57512 | 6.23E-10 | -12.65782 | -11.78790 | -12.45768 |
| 3 | 42.09813 | 2.12E-10 | -13.76893 | -12.42365 | -13.34267 |
| 4 | 23.12365 | 1.42E-10 | -14.12567 | -12.43567 | -13.64587 |
| 5 | 25.36574 | 7.13E-11 | -15.12456 | -12.87652 | -14.23145 |
| 6 | 13.78612 | 5.77E-11 | -15.25467 | -12.97543 | -14.64535 |
| 7 | 7.56432 | 7.08E-11 | -15.532475 | -12.99549 | -14.75325 |
| 8 | 19.76834* | 2.78E-11 | -16.35127 | -13.14768 | -15.15476 |
| 9 | 13.25467 | 1.89E-11 | -17.54356 | -13.85375 | -16.25467 |
| 10 | 11.86523 | 1.13E-11* | -18.76843* | -14.77985* | -17.34656* |

* indicates lag order selected by the criterion

According to our assertions, financial advancement is unlikely to be more than a leading element in growing economic growth rates, and certainly not the most important driver. The idea that rising real income levels lead to greater demand for financial resources from both families and enterprises is also taken into account by our VAR paradigm. Increased demand for financial services leads to financial sector corporations extending their operations and/or governments reducing financial sector rules, according to the so-called reverse causation thesis. In light of the foregoing factors, we devise the following VAR scheme:

**Table 8.** Variance Decomposition Percentage of 16 years Error Variance

| Percentage of forecast error variance in | Typical shock in | | | | | |
|---|---|---|---|---|---|---|
| | GDτ | T C$_t$ | NIVτ | LAB$_t$ | CAPτ | TRAτ |
| GDτ | 55.2 | 8.6 | 4.3 | 12.5 | 14.3 | 6.5 |
| T C$_t$ | 13.8 | 63.8 | 10.4 | 4.1 | 3.3 | 6.6 |
| NIVτ | 14.9 | 8.7 | 59.4 | 2.8 | 8.4 | 4.8 |
| LAB$_t$ | 11.8 | 3.1 | 2.9 | 78.9 | 4.7 | 1.2 |
| TRAτ | 15.4 | 1.8 | 4.1 | 11.3 | 5.3 | 72.4 |
| CAPτ | 16.3 | 4.3 | 2.6 | 4.6 | 74.6 | 1.5 |

We use total credit as an indicator of financial growth, following Levine (1997) and the World Bank (2020). We utilize overall credit to the economy as a measure of financial growth (TC). Credit is a useful indicator of financial growth since it is connected to mobilizing savings to simplify transactions, providing credit to suppliers and consumers, cutting transaction costs, and functioning as a medium of exchange. Deregulation, technological advancements, and the emergence of new financial products have all contributed to the financial market's rapid changes in recent years (including widespread use of credit cards, telephone banking and Internet banking). These reforms appear to have made it simpler for financial systems to create additional credit, particularly the abolition of credit rationing.

$$V\tau = \sum_{i=1}^{N} SiV_{t-i} + \delta\tau \qquad (1)$$

where $V\tau = \ll GD\tau, TC\tau, NIV\tau, LAB\tau, TRA\tau, CAP\tau \gg$

$$\delta\tau = \ll \delta GD\tau, \delta TC\tau, \delta NIV\tau, \delta LAB\tau, \delta TRA\tau, CAP\tau \gg$$

S1–SN are SIX coefficient matrices, and $\delta\tau$ is a vector of error terms. $GD_t$ = logarithm of real GDP, $TC_t$ = logarithm of total credit to the economy, $LAB_t$ = logarithm of labor force change, $CAP\tau$ = logarithm of physical capital, NIV = logarithm of net investment, and TRA = logarithm of total trade as a percent of GDP.

We use annual data from Belarus for the period of 2003-2018 and we excluded the year 2019-2020 data due to the corona virus and its unusual effect on the financial and economic growth data to construct VAR models to examine the relationship hypotheses between financial development and economic growth. The data was obtained from the World Bank, World Tables, subscribed online through DX-Data, Belarus.

Table 8 shows the findings of the model (1), which were derived using Microsoft. The forecast error variance decomposition of uncontrolled VAR models was calculated during a sixteen-year (2003-2018) projection period.

We begin by presenting the results, which demonstrate how the prediction error variance of our target variables may be decomposed into components that may be given to each of the VAR variables. We examine the relationships between total credit and economic development, as well as consumption, import and export openness, and labor force contributions to GDP.

As expected, each time series explains the bulk of its own prior values: for example, GD explains almost 55.2% of its forecast error variation. $TC_t$, on the other hand, is responsible for around 63.8% of the projected error variance and the $CAP\tau$ explains almost 74.6 % of its forecast error variation. The fact that prior values account for the majority of GDP growth suggests that current-period economic growth influences prospective growth rates or that the anomaly is due to a strong "lag effect" in the business cycle.

For the sake of our research, however, we are more interested in the contribution of total credit ($TC_t$) to GDP ($GD_t$) than other variables such as exchange (TRA), expenditure (NIV), physical capital ($CAP\tau$) and labor ($LAB_t$). It's obvious from the table 6 that physical capital ($CAP\tau$) input  is the most important factor influencing economic growth, accounting for 14.3 % of the forecast error variance, while labor ($LAB_t$) is the second in importance in influencing economic growth with 12.5% of the forecast error variance, while overall credit ($TC_t$) is the third most important factor,

accounting for 8.6% of the forecast error variance, followed by exchange transparency (TRA, 6.5%) and spending (NIV, 4.3%).

Table 8 also reveals that trade openness, TRA, has a bigger influence on GDP growth, GD (TRA explains 6.5 percent of GD prediction error variation) than investment, NIV (NIV explains just 4.3 percent of GD forecast error variation), bolstering the idea that openness promotes economic growth.

Table 9 also reveals that both trade and investment tend to have high lagged effects, which are largely explained by their own historical values (around 70 percent of its forecast error variance and is more than that of GD$\tau$ and TCt).

Physical capital, together with human capital (labour) and land/natural resources, are three major elements of production in economic theory and the condition of technology affects a production in economic theory and increase it. The fact that physical capital and labor contributes the most to Belarusian GDP growth implies that the Belarusian economy is essentially utilizes more labor, increases the training of its workers, and increases the usage of physical capital like building, manufacture equipment's ,etc to produce of goods and services efficiently, Moreover, this study shows that financial advancement has assisted GDP development in Belarus and that the quick transformation in the Belarusian financial sector has resulted in significant credit inputs to the Belarusian economy.

The fact that total credit contributes more to GDP growth in Belarus than net investment shows that the country's principal source of growth is frequently based on inefficient net investment and extensive usage of credit/resources.

We utilized the data from Belarus in the model we outlined previously to conduct a Granger causality test, which is an improved Wald test proposed by Toda (1995) to determine if there is a one-way or two-way causation between financial development and economic growth.

$$V\tau = \sum_{i=1}^{N} SiV_{t-i} + \delta\tau$$

Recall $V\tau = \ll GD\tau, TC\tau, NIV\tau, LAB\tau, TRA\tau, CAP\tau \gg$

$$\delta\tau = \ll \delta GD\tau, \delta TC\tau, \delta NIV\tau, \delta LAB\tau, \delta TRA\tau, CAP\tau \gg$$

**Table 9**. Granger Causality Test

| Variables | P-values |
|-----------|----------|
| TC - GDP | 0.04* |
| GDP- TC | 0.01** |
| EG - NIV | 0.04* |
| NIV- EG | 0.05** |
| NIV - TC | 0.03* |
| TC - NIV | 0.04** |

Note: $\Rightarrow$ direction of causality. *mean significant at 5%; **mean significant at 1%.

The coefficient matrices S1 SN are six by six. To test the hypothesis that "financial development causes economic growth," we must see if the coefficient of TC, the indicator of financial development, is important in the VAR for economic growth. We look at if the EG (economic growth) coefficient is significant in the VAR for financial development to determine if the "Granger causality from economic growth to financial development" thesis holds true.

The findings are shown in Table 9. They demonstrate that financial development and GDP growth are inextricably linked, meaning that the impact of financial development on Belarusian economic growth cannot be exaggerated. The Ganger causality between GDP growth and financial development (TC) is higher than the causality between finance and GDP growth.

# CONCLUSION

This research uses VAR techniques of innovation accounting or variance decomposition and impulse response feature analysis, as well as a Granger causality test, to include a comparative study of the link between financial development and GDP growth in Belarus.

Financial development has been identified as the second most important factor affecting economic growth in Belarus (after labor contribution), and rapid reform and improvement in the Belarusian financial system has resulted in substantial credit capital entering the economy, contributing to GDP growth in Belarus. However, we discovered that Belarus's strong economic growth over the previous two decades has had a significant impact on financial development by establishing a steady credit foundation (through increasing personal income and private and public resources). This shows a two-way causation between finance and growth, especially in light of the so-called "financial-led expansion" debate. While trade increases GDP growth in Belarus, credit expansion has had little effect on net investment growth. Labor input is the most important component driving economic development in Belarus.

We were able to discover some evidence for the hypothesis that financial advancement "leads" economic expansion using the data from this research on Belarus. Financial advancement appears to be only a minor contributor to GDP growth, and it is almost likely not the most significant component.

Whatever causation there is, it is clear that it is not universal in direction or intensity, demonstrating the limitations of cross-sectional analysis in this context. From a different statistical perspective, the results presented here suggest that, at least in Belarus, time-series research does not necessarily accept the assumption that financial advancement "leads" economic expansion.

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