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Financial Institutions and Markets

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Introduction to Financial System

What is Financial System?

- The financial system deals with the financial transactions and the exchange of money between savers, investors, lenders and borrowers.
- Financial systems are made of different intricate and complex models that link financial institutions and markets to provide financial services for various stakeholders operating in the financial system like depositors, lenders, borrowers, government and others.

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Money, Credit and Finance

- The financial system is concerned about money, credit, and finance

- **Money** refers to the current medium of exchange or means of payment.

- **Credit** or loan is a sum of money to be returned normally with interest; it refers to a debt of economic unit.

- **Finance** is monetary resources comprising debt and ownership funds of the State, company or person.

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Functions of Financial System

- It provides payment system for the exchange of goods and services in the economy.
- It provides the mechanism to pull the funds in terms of household savings for corporate investments.
- It provides the financial capital for long-term capital formation for the government and business organizations.
- It facilitates the investors and other market participants to liquidate their investment alternatives like stocks and bonds etc.
- It provides the avenues for managing the risks faced by the market participants.
- It takes care of both short-term and long-term needs of the market participants.
- It supplies the required financial capital to government for public expenditure on the social welfare activity, infrastructure development etc.

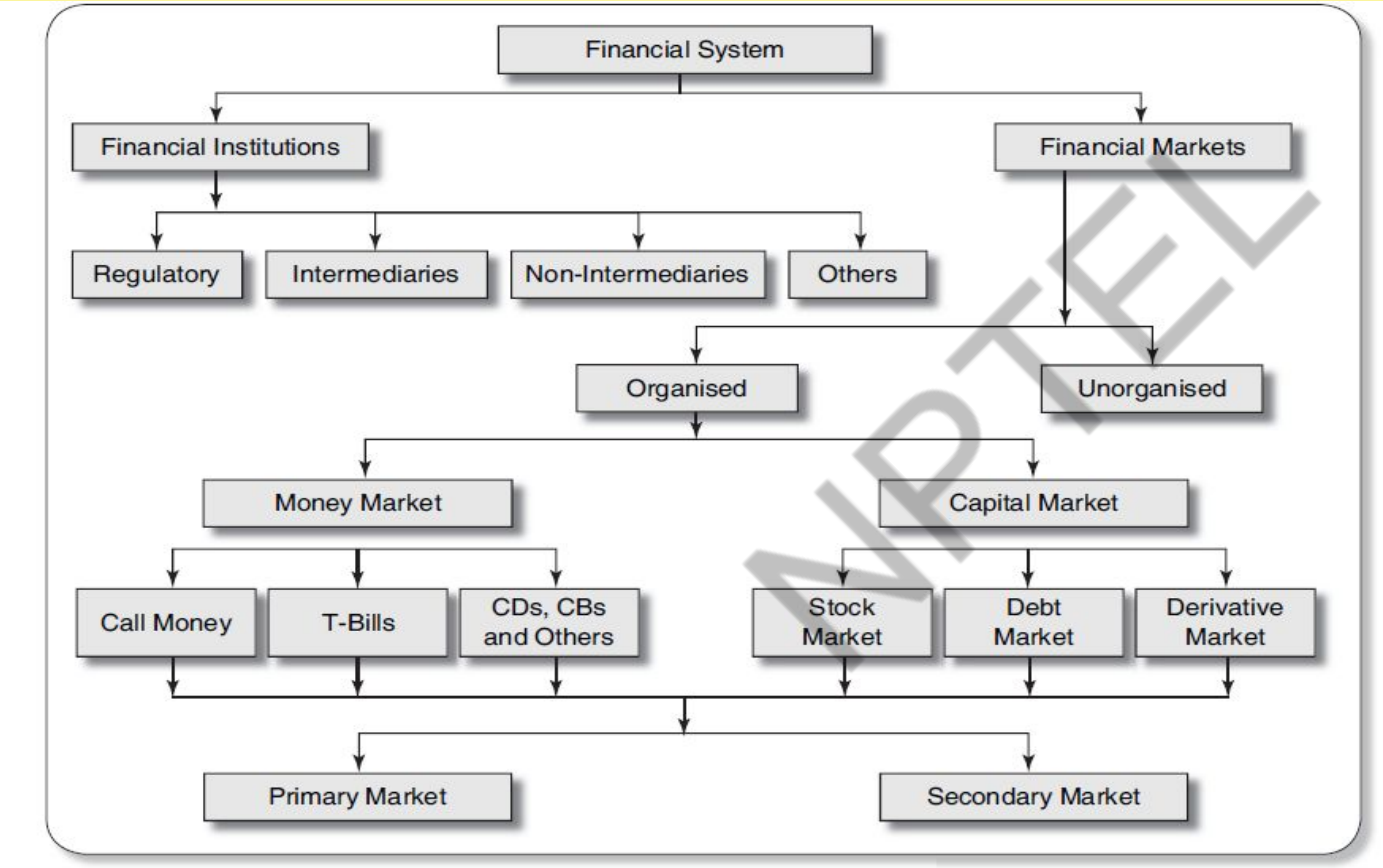
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Functions of Financial System Cont…

- It provides the price information which helps to coordinate the decentralized decision making process in the various sectors.
- It helps in reduction of the asymmetric information and moral hazard problems which in turn facilitates in reducing the transaction costs
- It creates different investment opportunities for the investors to maximize their return.
- It helps in efficient allocation of financial resources.
- It plays a significant role for economic growth as it helps to create the demand and supply of the funds through which the interest rates are determined in various markets. Changes in interest rates affect the money supply, inflation rate and also the possibility of the foreign investments.

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Structure of the Financial System



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Classification of Financial Institutions

- Banking and Non-Banking
  - Banks provide transactions services
  - Create deposits or credit
  - Subject to legal reserve requirements
  - Can advance credit by creating claims against themselves
  - other institutions can lend only out of resources put at their disposal by the savers
  - Examples of non-banking financial institutions are Life Insurance Corporation (LIC), Mutual Fund Institutions (MFIs), and other Non-Banking Financial Companies (NBFCs).
  - According to Sayers banks are "creators" of credit, and non-banking institutions are "purveyors" of credit

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Classification of Financial Institutions Cont…

- Intermediaries Vs. Non-Intermediaries
  - Intermediaries intermediate between savers and investors;
  - They lend money as well as mobilise savings;
  - Their liabilities are towards the ultimate savers, while their assets are from the investors or borrowers
  - All banking institutions are intermediaries and LIC and GIC are some of the non-banking financial intermediaries (NBFI)
  - Non-intermediary institutions do the loan business but their resources are not directly obtained from the savers Example: IFC, NABARD etc.

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Classification of Financial Markets

- **Money and Capital Markets**
  - This conventional distinction is based on the differences in the period of maturity of financial assets issued in these markets
  - While the money markets deal in the short-term claims (with a period of maturity of one year or less), the capital markets does so in the long-term (maturity period above 1 year) claims
- **Primary and Secondary Markets**
  - Primary markets deal in the new financial claims or new securities
  - Secondary markets deal in securities already issued or existing or outstanding

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Reference

- Bhole, L.M and Mahakud, J (2017), Financial Institutions and Markets, Sixth Edition, McGraw Hill Education (India) Private Limited, Chennai, India

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Equilibrium in Financial Markets

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Equilibrium

Equilibrium is established when the expected demand for funds (credit) for short-term & long-term investment matches with the planned supply of funds generated out of savings and credit creation

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Assumptions

- The equilibrium in financial markets is usually determined by assuming that there would be perfect competition, and by using the well-known tool of supply and demand
- Perfect financial market assumptions
  - Large number of savers and investors operate in markets
  - Savers and investors are rational
  - All operators in the market are well-informed and information is freely available to all of them
  - There are no transactions costs
  - The financial assets are infinitely divisible
  - The participants in markets have homogeneous expectations
  - There are no taxes

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Explanation

- In panel (A) of Fig 1 (SS) curve shows the aggregate supply of funds and (DD) curve shows the aggregate demand for funds.
- Their intersection point E, reflects the equilibrium position at which Q amount of funds will be supplied and demanded at the equilibrium rate of interest, r.
- The supply curve slopes upward from left to right, which means that as the rate of interest increases (decreases), more (less) funds would be made available in the financial system.
- The demand curve slopes downward from left to right, which means that as the rate of interest increases, the demand for finance would decline.

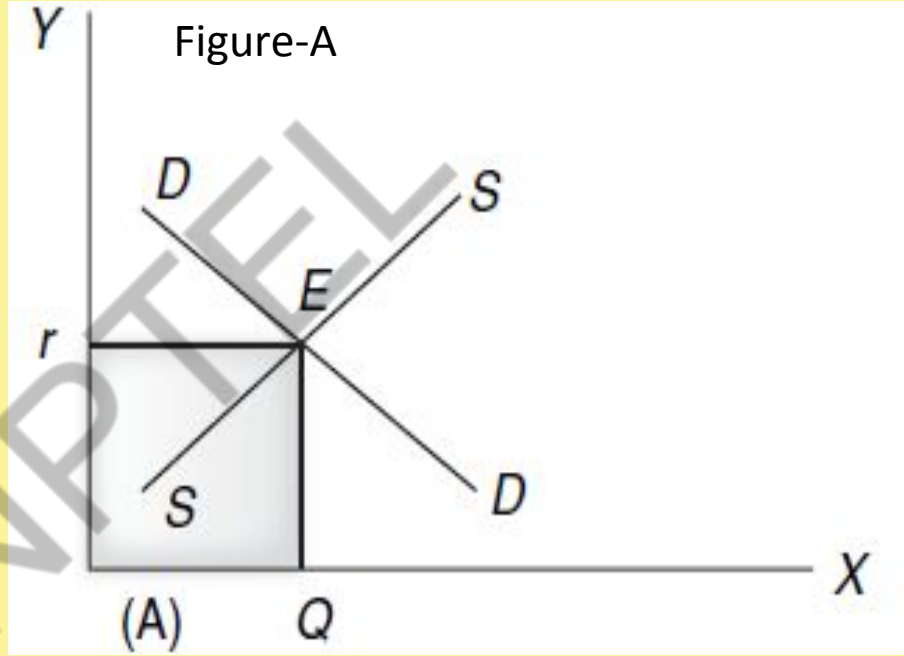


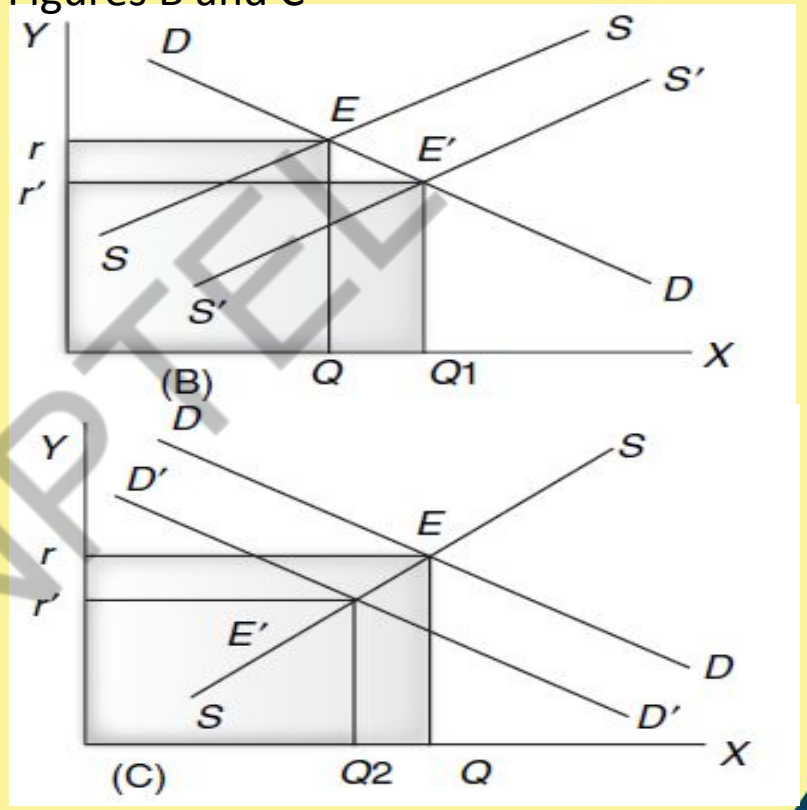
Figure-A

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Shift in the Demand and Supply Curves

- The panels (B) and (C) in Fig. show the effect of the shift in the supply curve and demand curve, respectively.
- In panel (B), when the supply curve (SS) shifts to the right (S'S') i.e., when the supply of funds increases, other things (demand) being the same, the equilibrium rate of interest declines from r to r′. The similar result is seen in panel (C), when the demand curve (DD) shifts to the left (D′D′) i.e., when the demand for funds declines but the other things (supply) remain the same, the rate of interest declines

Figures B and C



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Determinants of Supply of Funds

- Aggregate savings by the household sector, business sector and the government sector
- Level of current and expected income
- Cyclical changes in income, age wise variations in income, distribution of income in the economy, degree of certainty of income
- Wealth
- Inflation
- Desire to provide for old age, family members, contingencies
- Rate of interest
- Availability of savings media with preferred investment characteristics
- Development of banks and other financial institutions

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Determinants of Demand for Funds

- Investment in fixed and circulating (working) capital
  - The current level of capital stock
  - Capacity utilisation
  - The desired capital stock, which is influenced by business expectations (prospects) regarding future demand for goods (sales), prices, Government policies, and profitability
  - Availability of internal funds
  - Cost of funds
  - Technological changes.
- Demand for consumer durables
  - The demand for consumer durables depends upon (a) changes in tastes and preferences, (b) fashion, (c) demonstration effect, and (d) cost of funds.
- Investment in housing

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Some Observations

- The financial markets are characterised by many imperfections, restrictive practices, and externalities
- Existence of transactions costs, lack of information, limited number of operators, direct and indirect intervention by the authorities

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Financial Market Efficiency

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What is Financial Market Efficiency?

- The ultimate focus of the efficiency in financial markets is on the non-wastefulness of factor use and the allocation of factors to the most socially productive purposes
- The market in which the price for any security effectively represents the expected net present value of all future profits
- Buying or selling the stock should, on average, return you only a fair measure of return for the associated risk.
- Conditions for Efficient Market
  - A large number of competing profit-maximizing participants analyze and value securities, each independently of the others
  - Active participation in the market
  - Individuals can not affect the market prices
  - Information must be free
  - Free entry and exit by market players must be uninhibited

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Types of Efficiency

- **Information Arbitrage Efficiency**
  - This is the degree of gain possible by the use of commonly available information. If one can make large gains by using commonly available information, financial markets are said to be inefficient.
- **Fundamental Valuation Efficiency**
  - When the market price of a security is equal to its intrinsic value or investment value, the market is said to be efficient. The intrinsic value of an asset is the present value of the future stream of cash flows associated with the investment in that asset, when the cash flows are discounted at an appropriate rate of discount.
- **Full Insurance Efficiency**
  - This indicates the extent of hedging against possible future contingencies. The greater the possibilities of hedging and reducing risk, the higher is the market efficiency.
- **Functional or Operational Efficiency**
  - The market which minimises administrative and transactions costs, and which provides maximum convenience (minimum inconvenience) to borrowers and lenders
- **Allocational Efficiency**
  - When financial markets channelise resources into those investment projects and other uses where marginal efficiency of capital adjusted for risk differences is the highest

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Issues in Efficient Market

- How well do markets respond to new information?
- Should it be possible to decide between a profitable and unprofitable investment given current information?

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Efficient Market Hypothesis (EMH)

- The current prices of securities reflect all information about the security (Random Walk Hypothesis)
- New information regarding securities comes to the market in a random fashion
- Profit-maximizing investors adjust security prices rapidly to reflect the effect of new information. The expected returns implicit in the current price of a security should reflect its risk

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Market Efficiency Forms

- Efficient market hypothesis
  - To what extent do securities markets quickly and fully reflect different available information?
- Three levels of Market Efficiency
  - Weak form - prices reflect all **security-market** information
  - Semi strong form - prices reflect all **public** information
  - Strong form - prices reflect all **public and private** information

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Weak-Form EMH

- Current prices reflect all security-market information, including the historical sequence of prices, rates of return, trading volume data, and other market-generated information
- This implies that past rates of return and other market data should have no relationship with future rates of return

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Semi Strong Form EMH

- Current security prices reflect all public information such as earnings, stock and cash dividends, splits, mergers and takeovers, interest rate changes etc. It also says that prices adjust to such information quickly and accurately so abnormal profits on a consistent basis can not be earned.
- This implies that decisions made on new information after it is public should not lead to above-average risk-adjusted profits from those transactions

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Strong Form EMH

- Stock prices fully reflect all information from public and private sources
- This implies that no group of investors should be able to consistently derive above-average risk-adjusted rates of return
- This assumes perfect markets in which all information is cost-free and available to everyone at the same time

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Measures of Financial Development

Aggregate Financial Development Indicators

- Finance Ratio (FR): the ratio of total issues of primary and secondary claims to national income
- Financial Inter-relation Ratio (FIR): the ratio of financial assets to physical assets in the economy
- New Issue Ratio (NIR): the ratio of primary issues to the physical capital formation which indicates how far investment has been financed by direct issues to the savers by the investing sectors.
- Intermediation Ratio (IR): the ratio of secondary issues to primary issues, which indicates the extent of development of financial institutions as mobilisers of funds relative to real sectors as direct mobilisers of funds. It indicates institutionalisation of the financial activity in the economy.
- The ratio of money to national income: the higher this ratio the greater the financial development because it indicates the extent of monetisation and the size of exchange economy in the country.

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Aggregate Financial Development Indicators Cont…

- The proportion of current account deficit which is financed by market related flows
- Developed financial sector is fully integrated (is not segmented) domestically as well as internationally
- Lower the transaction cost and information cost
- Private banking and not public sector banking is predominant
- Strong and effective system of supervision, inspection, auditing, and regulation

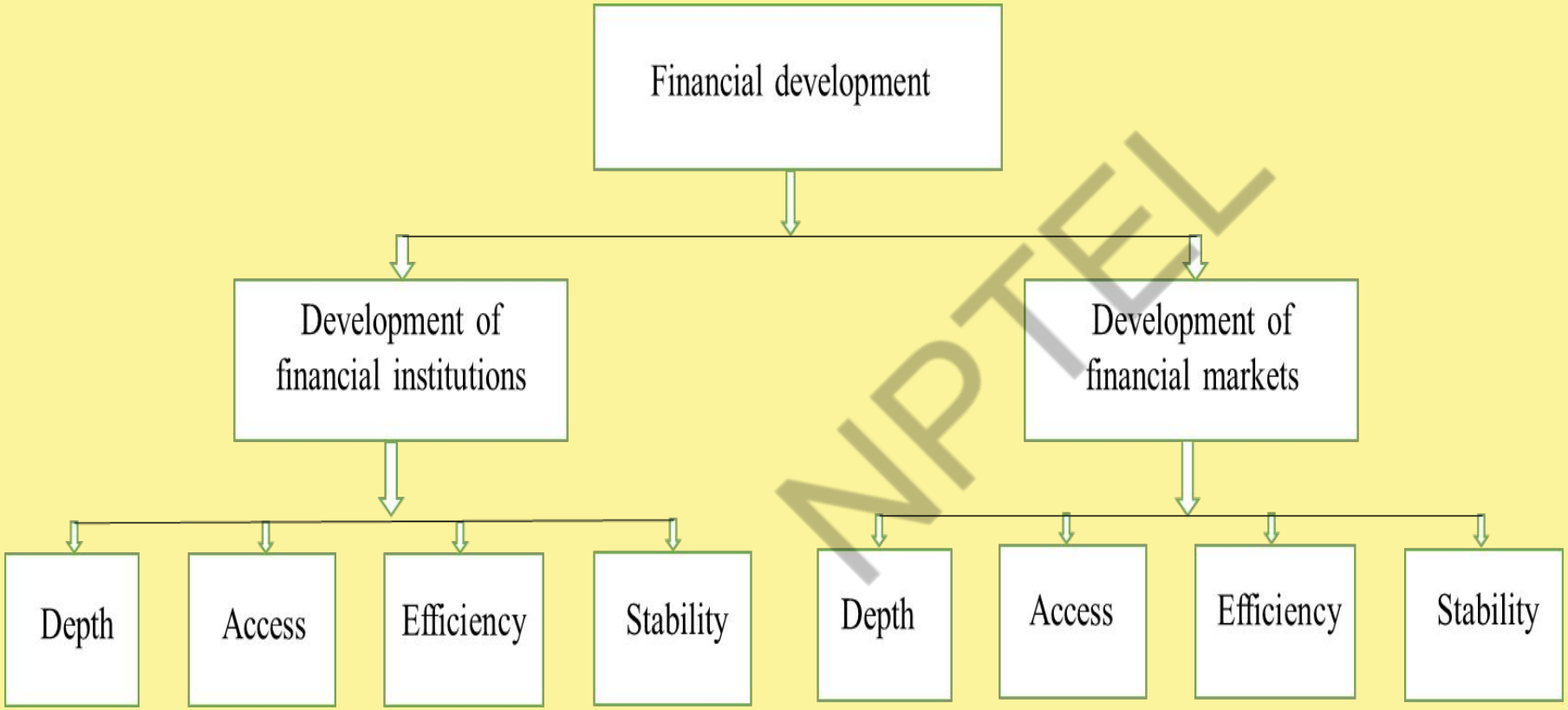
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Aggregate Financial Development Indicators Cont…

- Presence of strong, active, large-sized non-bank financial sector comprising stock market, debt market, insurance companies, pension funds, mutual funds, etc.
- High level of current and capital account openness/convertibility and minimum restrictions on foreign ownership of assets
- Effective and quick enforcement of financial contracts, and recovery of loans
- Use of indirect rather than direct techniques of monetary policy

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Dimensions of Financial Sector Development



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Indicators

Category	Indicator	
	Financial Institutions	Financial Markets
Depth	Private sector credit to GDP Mutual fund assets to GDP Pension fund assets to GDP Nonbank financial assets to GDP	Stock market capitalization to GDP Stock market total value traded to GDP International debt issues to GDP Outstanding domestic private debt securities to GDP Outstanding domestic public debt securities to GDP
Access	Bank branches per 100000 adults ATMs per 100000 adults Working capital financed by banks	Market capitalization excluding 10 top largest companies to total market capitalization Non-financial corporate bonds to total bonds Investments financed by equity or stock sales
Efficiency	Bank net interest margin Bank lending-deposit spread Non-investment income to total income Return on assets Return on equity Bank cost to income ratio Bank overhead cost to total assets	Stock market turnover ratio (stocks traded to capitalization)
Stability	Bank Z-score Non-performing loans to total loans (%) Bank credit to bank deposits Capital to risk weighted assets	Stock price volatility

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Subjective Parameters of Development (Richard D. Erb, IMF)

- Whether institutions find the most productive investments?
- Do institutions revalue their assets and liabilities in response to changed circumstances?
- Do investors and financial institutions expect to be bailed out of mistakes and at what price?
- Whether institutions facilitate the management of risk by making available the means to insure, hedge, and diversify risks?
- Do institutions effectively monitor the performance of their users, and discipline those not making proper and effective use of their resources?
- How effective is the legal, regulatory, supervisory, and judicial structure?
- Whether financial institutions publish consistent and transparent information?

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Financial Development and Economic Growth

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Importance of Financial Development for Economic Growth

- Materials, and money are crucial inputs in production activities
- Financial development affects economic growth through savings and investments
- Enhances the efficiency of the function of medium of exchange

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Theories of the Impact of Financial Development on Savings and Investment

- The Classical Prior Voluntary Saving Theory
- Credit Creation Theory
- Forced Saving or Inflationary Financing Theory
- Financial Repression Theory
- Financial Liberalisation Theory

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Prior Savings Theory

- Saving as a prerequisite or a determinant of investment
- It is averse to inflation, it advocates control of inflation
- Suggests a policy of reasonably high positive real interest rates to encourage savings by the public
- Financial institutions promote development by offering the following "transformation services or functions
  - Liability-Asset Transformation
  - Size-Transformation
  - Risk-Transformation
  - Maturity Transformation

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Credit Creation Theory

- Financial system plays a positive and catalytic role by providing finance or credit through creation of credit in anticipation of savings
- Independence of investment from saving in a given period of time
- Equality in savings and investments
- Investment out of created credit results in a prompt income generation

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Theory of Forced Savings

- Investment is not determined by savings
- Investments can be increased autonomously through monetary expansion
- Channels through which monetary expansion affects economic growth:
- If the resources are unemployed, it would increase aggregate demand, output, and savings
- Portfolio Shift Effect (if resources are fully employed)
- Income Distribution Effect (increasing savings through profit)
- Inflation Tax Effect

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Financial Regulation Theory

- Financial markets are prone to market failure
- Certain forms of Government intervention are required
- The lowering of interest rates through government intervention improves the average quality of the pool of loan applications, and improves the efficiency with which capital is allocated
- Direct credit programmes can encourage lending to sectors which are usually shunned by the market
- Government intervention provides that public good
- Stable Payment system

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Financial Liberalisation Theory

- Increase in interest rates on a variety of financial assets as they would adjust to their competitive free-market equilibrium level
- Increase in saving, reduction in the holding of real assets, and increase in financial deepening
- Expansion in the supply of real credit
- Increase in investment
- Increase in average productivity of investment
- Increase in allocative efficiency of investment.

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Causality between Financial Development and Economic Growth in India

Null Hypothesis	*F- Statistics*	*Probability Value*
FD does nor Granger-cause EG	3.256*	0.001
EG does nor Granger-cause FD	2.924*	0.015

Note: * Significant at 1% level

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