UNIT ONE

CONCEPTS AND DIMENSIONS OF RURAL FINANCE

What is Rural mean?

What is Finance mean?

What is the Rural Finance mean?

Meaning and Scope

Rural: A people that live not in urban area/ a people mostly their live depend on agriculture.

Finance: is narrowly interpreted as capital in monetary form that is in terms of funds lent or borrowed, normally for capital purposes, through financial markets or institutions.

Rural finance, as defined by the **World Bank**, is the provision(give) of a range of **financial services** such as **savings, credit, payments & insurance to rural individuals, households, & enterprises, both farm and non-farm**, *on a sustainable basis*.

- **It includes financing for agriculture and agro processing.**
- ***Agricultural finance*** is defined as a subset of rural finance to financing agricultural related **activities** such as **input supply, production(t*eff*/maize/barely/wheat), distribution(dus.of out of agr. from one place to other), wholesale(collecter of all product from different framer/producer/, processing(tomato-----with machine it packed/wheat---millet----bread and marketing**.
- Agricultural finance is the economic study of the acquisition & use of capital in agriculture

- It deals with the supply of and demand for funds in the agricultural sector of the economy.
- Knowledge of fundamental economic & management principles & analytical procedures facilitates obtaining control over capital and using it efficiently.

Microfinance is the provision of financial services for poor and low income people and covers the lower ends of both rural and agriculture finance.

Financial analysis related to farm income, repayment capacity, and risk management indicates the total amount of capital the farm business can profitably and safely use.

- Information and knowledge on the legal aspects of borrowing, leasing, and contractual arrangements helps the farmer select the means of acquiring and controlling resources that will contribute most to the farming operation.

1.2. Roles of Rural Finance and Financial Systems

1.2.1. Role of Rural Finance to Growth

- Technological revolution including mechanization, improved varieties, modern chemical pesticides and fertilizers, and new production methods have contributed to the increase in production per acre, per animal, per labor-hour.
- These technological and structural changes in agriculture have increased the risks of owning and operating a farm business.
- The increased use of credit in farm business along with narrower profit margins has increased the financial risk of farming.
- The importance of finance in agriculture has significantly increased over time in accordance with the change in technology and the increase in production.

- Policy should be directed at developing a market-based financial system for rural finance, but because of market failures to support disadvantaged groups, a special-priority program may be needed to get credit to women, smallholders and the rural non-formal sector.
- Subsidizing interest rates is not the way to help marginal borrowers.
- Instead, they can be helped through fixed-cost subsidies & self-selected targeting.
- Commercial banks should be encouraged to lend on other bases than the mortgage and passbook system.

- They should consider lending for such downstream agricultural activities as agro-processing. To improve rural financing, the system of property rights, title and default enforcement must also be strengthened, among other reforms.
- Generally, to improve performance in the rural economy and efficiency in financial institutions, rural credit markets must be liberalized. The following reforms are important in an economy:
- Avoiding produce and price controls;
- Operation of commercial banks in a competitive environment;
- Availability of credit to support productivity growth for agricultural smallholders and small producers of the rural non-formal sector, where growth potential of developing countries lies; and
- Credit availability to women and to the rural poor for consumption-smoothing and for sustainable income-generating activities.

1.2.2. Role and Functions of Financial Systems

- The financial system plays a key role in a market economy because of its importance in mobilizing & allocating resources to finance agricultural investment projects that are necessary for economic dev't.
- A poorly functioning financial system can be a major constraint to private investment and entrepreneurship without which growth would be difficult to sustain over the long run.
- Investment can be constrained by low returns on investment or high cost of finance.
- In turn, high cost of finance can be traced to bad external finance or bad local finance, while bad local finance can be caused by low savings or poor financial intermediation.

- Financial systems ease market frictions and in the process influence the allocation of resources across space and time.
- The costs of acquiring information, enforcing contract, and making transactions create incentives for the emergence of particular types of financial contracts, markets and intermediaries.
- Financial systems have many functions contributing to growth and development of a country.

❖ The five key functions of financial systems that are essential to growth can be identified as follows:

✓ Produce information about possible investments& allocate capital;
✓ Monitor investments and exert corporate governance;
✓ Facilitate the trading, diversification, and management of risk;
✓ Mobilize and pool savings; and
✓ Ease the exchange of goods and services.

Challenges in Rural Finance

- It is recognized that rural areas and populations remain underserved, yet economic dev't for these areas & populations are key components in the overall development of a country.
- The donor community and providers entering the market have shown a renewed interest in economic growth leading to poverty reduction within rural populations.
- In spite of their renewed commitment, significant challenges to the successful implementation of effective delivery of services & outreach remain prevalent.
- Given these facts the question remains: what are these challenges

•and what can institutions do to respond to them to make agriculture credit work?

•Some factors unique to rural and agricultural markets that constrain both the supply and demand for finance in those areas could be economic, political, legal, institutional, and weather related.

•***Economic challenges:*** Rural finance faces varieties of challenges resulting from the economic reality of a country including the following:

❖Transaction costs – High transaction costs for both borrowers & lenders;

❖Economic activities – Often limited economic opportunities available to local populations;

- Risk – High risks faced by potential borrowers and depositors due to the variability of incomes, exogenous economic shocks and limited tools to manage risk;
- Concentration of activities – Heavy concentration on agriculture and agriculture related activities exposes clients and institutions to multiple risks;
- Crowding–Crowding out effect due to subsidies & directed credit;
- Portfolio concentration – Increased risks associated with the concentration of a portfolio on agricultural activities;

❖Collateral – Lack of adequate or usable collateral (lack of assets, unclear property rights);

❖Infrastructure – Undeveloped or inadequate infrastructure;

❖Land fragmentation – Land held may be too small to be sustainable in an optimal use; and

❖Sources of income – Individuals may be dependent upon only one crop with no other external sources of income.

Political, legal and institutional challenges: The following are some of the political, legal, & institutional challenges faced in rural finance.

•Institutional capacity–Weak institutional capacity including poor governance and operating systems, low staff and management skills;

- Political intervention–Risk of political intervention, which can undermine payment morale through debt forgiveness & interest rate caps;
- Policy – Inhospitable policy, legal and regulatory frameworks;
- Legal systems–Undeveloped legal systems, inadequate contract enforcement mechanisms;
- Information – Lack of reliable information about borrowers; and lack of market information and/or market access.

❖ ***Cultural and geographical challenge:*** Cultural and geographical challenges are the common problems faced in rural finance some of which are listed below:

- Population density and demand – Generally lower population density and dispersed demand;
- Repayment culture – History of poor repayment culture, many in the rural populations historically associate poverty reduction efforts with charity from NGO's and view the microfinance institutions in the same way making it a challenge to develop good repayment behavior; and
- Accessibility – It is sometimes difficult to gain access to the communities and to get the community to accept credit terms.
- ***Weather challenges:*** Developing countries with a great dependence on rain-fed agriculture are highly influenced by weather related challenges including:
- Rainfall – Rainfall patterns vary by region resulting in some areas with one growing season and others with three;

❖Natural disaster – Susceptibility to natural disasters which can cause sudden and severe devastation to livelihoods; and

❖Seasonality – potentially affecting both the client and the institution.

❖Unfortunately, financial services providers in rural markets are not able to choose which challenges they will face.

❖More often than not the various challenges reinforce and compound each other.

❖For example, the high risk inherent in agriculture means increased importance in screening and monitoring of clients and therefore higher transaction costs for both clients and institutions, which are exacerbated by the dispersion of the client base and small loan sizes.

Calvin Miller (2004) has identified 12 key challenges in rural finance.

- These challenges can be grouped into four as vulnerability constraints, operational constraints, capacity constraints, and political and regulatory constraints in a country.
- ***Vulnerability constraints:*** Vulnerability constraints include systematic risk, market risk, and credit / financial risk arising from the following issues in a country including: (1) weather condition, (2) plagues and diseases, (3) prices, (4) production, (5) useable collateral, (6) demand preferences, and (7) health and family needs.

- ***Operational constraints:*** These constraints are caused by low investment returns, low investment and asset levels, and low geographical dispersions of the rural financial institutions in a country. These constraints include: (1) low growth potential, (2) low velocity of capital, (3) non-competitive technologies, (4) lack of market integration, (5) lack or quality of roads and communication, (6) low efficiencies of business operations, and (7) high operating costs.
- ***Capacity constraints:*** Capacity constraints are related to infrastructural capacity, technical and training capacity, social exclusion, and institutional competency. These are caused by the following constraints:

(1) lack of business investment, (2) lack of competitive technologies, (3) lack of roads, (4) lack of communication, (5) lack of education, (6) lack of technical and management skills, (7) lack of institutional capacity, and (8) lack of social representation (civil society).

❖***Political and regulatory constraints:*** These challenges include political and social interference, and regulatory framework. They are related to the following challenges: (1) political interference, (2) NGO donation interference, (3) cultural and gender constraints, (4) land tenure laws, and (5) financial regulations and tax policy.

UNIT TWO: RESOURCE ACQUISITION AND USE OF CREDIT IN AGRICULTURE

Resource Acquisition in Agriculture

Resources of a farm business are limited in which case an owner of a **farm business** should try to **acquire the optimum size of financial and other resources in order to involve in an optimum size of operation**.

These resources have various sources including **internal and external sources.**

Sources of funds used to control capital assets can be classified as ***equity* and *non-equity* or debt financing**.

Equity capital is the capital owned by the operator while

Non -equity capital is the capital gained from debt financing. **They include savings and retained earnings, gifts and inheritance, pooling equity capital through a partnership or corporation, leasing, contract farming, and borrowing.**

1. Savings and Retained Earnings

Why a farmers use non equity capital?

❖Assume you get a certain amount of capital. Let its source be either from your own earnings, or borrowing from your friend or bank. Which source makes you more confident to use? Is there any source which makes you less confident?

- Despite the growing financial barriers to farm business entry, on going farm business firms can use their own capital sources to improve and diversify their farms.
- However, accumulating the beginning equity base needed to start farming by saving part of one's earnings from farm or non-farm employment is difficult. **Because of this limitation of equity capital, farm operators are required to use non equity capital.**

2. Gifts and Inheritances

- Because of the dominance of family farm in most countries' agriculture, much of the owner equity in agriculture can be **acquired through gifts and inheritances from the previous generation of farm operators(eg. Land)**
- **The disadvantage**
- this type of source of capital is that such funds are often not received when needed most
- **t**he availability of such funds for young farmers depends on the average life expectancy in a country.

3. pooling(grouping/collecting) Equity Capital

- There are several methods of combining equity capital in a farm business.
- One of the most common is the case where older farmers furnish capital to younger family members through **partnership, incorporation, or some other type of formal or informal agreement.**
- Although these arrangements are usually made among members of the same family, two or more unrelated individuals can pool their equity in a farm business.

Advantages:-

- economies of size and
- to distribute risk among two or more persons.
- profits share in direct proportion to their respective contributions of labor, management, and capital.

How to succeeded this pooling equity?

- Other essentials of a successful business organization involving two or more farmers include the following:

1.The goals of all participants should be compatible;

2.They **should be capable of getting along together and respecting each other's judgment**

3.The business must be large enough to provide an adequate living for all parties and

4.Good records, sound farm management, and common sense in the handling of money will help to avoid disagreement.

The pooling of equity capital of organizations including:-

1. ***Partnerships:*** A partnership exists whenever two or more persons associate to conduct a non corporate business. Partnership may operate under different degrees of formality, ranging from informal, oral understandings to formal agreement.

2. ***Corporation:*** A corporation is a legal entity authorized by law & is capable of doing business, making contracts, borrowing money, & the like.

    - **Advantage**:-In financing stand point is that the owners have limited responsibility.

❖**Disadvantage**: Management of the farm not in line with the interest of minority owners, and additional time, expenses, and taxes paid unlike other farm business organizations are some of the major disadvantages.

3. Leasing

➢**A *lease*** is basically a capital transfer agreement that gives the ***lessee*** **(the user farmer)(owner of land)** control over assets owned by the ***lessor*** **(investor)** for a specific period of time for an agreed-upon payment or rent.

➢Leasing is an alternative to purchase an asset in order to acquire the services of that asset.

- By leasing an asset the lessee essentially acquires its use value from the lesser, who actually purchased and owns the asset.
- There are various types of leasing facilities. The major types of leasing common in agriculture
  - financial lease,
  - operating lease, and
  - leverage lease

1.Financial lease

- is a contract that is non-cancelable and the lease period is usually shorter than the useful life of the asset being leased.
  - ✓Eg.(SLMP) Soil conservation, LLLUP, Livestock(fatting),poor farmer and farming equipment.
  - ✓Fund from USA, German and other
- During the life of the contract all of the cost of the property plus and servicing charges should be recovered through periodic payments(tractor , land and building)
- The lease assumes complete financial responsibility for the leased asset.

2.Operating lease

Why that a firm/farmer/producer lease machine?

Which one is best buying/leasing?

:-is a service gives(is a service available for which there is an established **leasing and second-hand market)**

- Assets are leased over periods from around six months up to three years for most types of equipment and machinery(depending on our nature of plant/activity).

Eg. Sugar can Production)----------from clear-- farming--sowing—harvest---machine--sugar(tractor).

- Alternative when a firm requires a machine for a relatively short period.

3. *leverage lease* (force/pull)

❖The lessee assigns his interest in a purchase order to lessor who agrees to advance only a portion of the total asset cost, and arranges to borrow the remaining portion from institutional lenders

A resource/materials that are leased(Leasing covers various assets including)

real estate,
machinery, and
livestock leasing.

1.Real-estate leasing: Leasing is a common way for farmers to obtain control of additional land.

- *share lease* or the *cash lease*.
- cash and share rent are combined called ***standing rent***
- in place of cash fixed measure of products,

2.Machinery leasing

Machinery leasing*: B*orrowed funds & buying machine is traditional method of acquiring control over farm machinery.

Why? B/C rapidly rising machinery prices. How to lease these machinery?

1.operating lease:- An operating lease is a short term contract in which case the farm operator leases the equipment by the hour, day, week, and month, etc.

The lessor is responsible for insurance, taxes, and major repairs, and the lessee covers variable expenses such as fuel, lubricants, and maintenance.

There are many arrangement/contract agreement b/n lessee and lessors operating lease

1.*custom hiring*, an operating lease arrangement whereby the **owner of the equipment furnish(serve/supply) the machine operator in addition to covering all operating expenses, and (eg. Driver or supporter)**

2.full-service lease, an operating lease contract under which the lessor assumes total responsibility for all repairs and maintenance costs.

2.The financial lease:-is a long term contract under which the lessor essentially provides financing to the lessee(lessor give finance & lesser buy a machine).

Usually the lessee is responsible for all repairs and maintenance .

3.Livestock leasing: The typical livestock-share lease contract .

- These contracts cover basic herd livestock such as dairy cows, beef cows.
- The lessor responsible to fixed ownership costs including depreciation, taxes, and interest on investment,
- while the lessee is responsible for variable costs such as feed, housing, veterinary services, and labor.

As a total Advantages of leasing to the lessee
As a view of lessee

1. *Asset procurement:* cheapest means of obtaining the use of the most suitable machinery or equipment.
2. *Additional source of finance*: asset is obtained without capital outlay(expenduture/Expense).
3. Certainty(confidence/surness) : **This assures the *availability* of an asset with certainty.**

- ❖ It has the fixed nature of a leasing contract to the lessor and to the lessee.

4. *Flexibility*: Leasing arrangements are very flexible.

5. *Convenience(easy)*: Lessees as a simple and convenient method of financing the acquisition of capital assets.

6. *Higher incomes: T*he incomes of early years of life compared with the expenses resulting from buying the asset.

7. *A well-defined cost*

8. *Maintenance is cheap and certain:* With leasing the maintenance may be contracted and this contract may be attractive.

Disadvantages of leasing to the lessee

1. ***Ownership flexibility:*** A purchaser of asset avoids any of the restrictions found in leasing agreements concerning the operation of the asset and the requirement to obtain the lessor's approval to the insurance arrangements

2. ***Residual value*** *:If agreement end a lesser give up a benefit.*

3. ***Security value(wastena):*** A lessee is unable to include the leased asset in a pool of assets(not as common asset)

    - ❖Not used as colleteral for borrowing.

4. ***Understatement of assets(services)(Labtop):*** The right to use asset for a major part of its **useful life is an intangible asset which**

is not shown on a lessee's balance sheet unless leased assets are capitalized at economic value.

5.Prestige(kibir): Sense of satisfaction denied to lessees/status of lesser is decrease.

4. Contract (agreement) Farming

- ❖ Resources used in the farming sector can be furnished(supply) by farm input (suppliers, processors, and distributors)and contract with producer
- ❖ Contract faming is, therefore, a way for an operator to obtain additional funds.

- ***Forward contract*** refers to a futures contract to buy or sell a specific physical commodity at some time in the future. There are three basic types of forward contracts used in farming namely

  1.market specification contracts,

  2.production-management contracts, and

  3.resource-providing contracts

5. Borrowing

- Method of farmers use to acquire funds.
- The word '*borrow'* means to receive some thing with the understanding that it or its equivalent will be returned as agreed upon.
- Stated another way borrowing means the ability to command capital or services currently for a promise to repay at some future time.
- In terms of money, borrowing involves obtaining a certain amount of funds to be repaid as specified in the note.

- Since credit is a resource that can be used or held in reserve, borrowers and nonborrowers alike are concerned with several questions.
  - ✓ For example, a farmer might ask: How much credit is available, and how much should be used? What are the costs of credit? What are my legal obligations as a borrower? Which lender is most likely to be able to serve my credit needs?

UNIT THREE
FINANCIAL MANAGEMENT IN AGRICULTURE

- ❖ A farmer maximizes his utility if the expected returns are maximized and the risk is minimized.

The theory of **financial management** defines the manager's role as maximizing the utility of the owner of the business, where utility is assumed to be a function of **return and risk**.

- ❖ Most business decisions can be thought of as a problem of selecting a portfolio of risky assets.

- ***Financial management*** **can be defined as the management of capital sources and uses so as to attain the desired goals of the firm, *i.e.* maximization of owner's wealth**.

- ✓ The firm's capital consists of items of value that are owned and used, and items that are used but not owned.
- ✓ Examples of the use of the capital of the firm are receivables, inventories, and fixed assets.

Financial management has two distinct functions:-

1.Financing function and

2.Investing function.

1. **The *financing function*** represents the management of the sources of capital,
2. ***Investing function*** indicates the **type, size, and percentage of composition of capital uses.** Investing function deals with the question "how much of the total capital provided by the financing sources should be invested in receivables, marketable assets, inventories, and fixed assets.

- A managing by duties and responsibilities that center the financing and investing functions are referred to as **financial management**.
- **The problems and opportunities** that a financial manager faces and the business decisions he makes entirely depend on the goals of his organization.
- Profit seeking firms should behave in a way they maximize the wealth of the owners.

Finance:- consists of three interrelated areas:

1.money and capital markets,

2.investments, and

3.Financial management.

1. **The money and capital markets** are deals with asset markets(knowledge/ability to manage) and financial institutions.
2. **The investments** area deals with the decision of both individual and institutional investors as they choose among enterprises for their investment portfolios.
3. **Financial management** involves the actual management of business firms.

- The types of decisions encountered in agricultural financial management range from farm plant expansion to choosing what type of enterprises to include to financial expansion of the farm business.

Financial management has three objectives:

1. **Determining the size and growth rate**: Financial management aims at determining how large the business firm should be and how fast should it grow.
2. **Determining asset composition**: Financial management aims at determining the best percentage composition of the firm's assets.
3. **Determining the composition of liabilities and equity**: Financial management aims at determining the best percentage composition of the firm's combined liabilities and equity decision related to capital sources.

Economic Activities of a Farm Business

- The manager of a farm business is responsible for planning, implementing, and controlling

What are economic activities of manager in firms?

A three types of economic activities:

1.Production,

2.Marketing, and

3.Financing.

Every activity requires set of decisions to be made.

1. **Production activities** require decisions on what to produce, how to produce, and how much to produce.
2. **Marketing activities** involve managerial decisions on matters such as procurement of inputs and pricing and distribution of outputs**.**
3. **Financial activities** require management decisions on **capital acquisition and use.**

Managerial process: The manager's job is to make decisions in an environment of risk and uncertainty.

- No one knows exactly what the future will bring.
- The prices, yields, costs, and the institutional structure within which the business operates may change bringing about unexpected results.

The managerial process can be defined in terms of a step-by-step procedure.

The financial manager is responsible for

1.Formulating goals,

2.recognize(identify) and analyzing problems,

3.making decisions(accept/reject),

4.taking actions(implemanting)

5.Controlling.

- ***Defining goals:*** Financial management is not an end in itself, but a means of accomplishing goals and objectives.

What a goals(objective) includes

- ❖To determine individual and family goals that grow out of needs and interests, past experiences, and values.
- ❖Goal setting is a continuous process whose establishment involves weighing interests and needs, and
- ❖modifying either the goals or the methods of attaining them.
- ❖ Goals define specific objectives.
- ❖Goals indicate investments that will be called for, expenses to be met, and income to be realized
- ❖The timing of goals should be recorded to indicate when funds will be needed and/or when income will be forthcoming.

- ***Profit Maximization as a goal:*** Profit maximization is usually assumed to be the overriding(over coming) goal of management.

However, this assumption has two short comings:

- It fails to account for the *timing* of earnings, and
- It fails to account for *risk* and *uncertainty*.

1.***Risk*** describes a situation in which the outcomes follow a known probability distribution.

2.***uncertainty*** refers to cases where the probabilities of different outcomes are unknown.

- ✓ **The two major sources of risk are *business risk* and *financial risk*.**

1.Business risk is the **variation in net earnings** arising from **the nature of the kinds of enterprises in which the firm is engaged**, including weather, disease, and price changes.

2.Financial risk determines how much capital should be acquired. Financial mangers really have only two basic **capital sources**:

1.own equity capital and

2.non equity capital. However, the use of no equity capital creates a fixed financial commitment in the form of **principal(key/main), interest, rent, or other obligations**.

Risk and Return as Goals

- The primary objective of a farm business may be profit maximization.
- However, profit maximization is associated with a variety of risks involved in every business.
- It is also difficult to measure the risk associated with the environment and individual enterprises.
- Returns and risk are set as goals of a business, and the principles of diversification to maximize returns and to minimize risk from an investment are introduced with relevant applicability in agriculture.

- An investment whose returns are fairly stable is considered to be a low-risk investment, whereas an investment whose returns fluctuate significantly is considered to be a high-risk investment.

The measures of profitability(**return**) and risk can be used in two cases of analyses. Which means an assets, businesses, investments, or enterprises can be analyzed:

1. On a stand-alone basis, where the enterprise is considered in isolation to estimate the expected return and risk involved in a single business; and
2. On portfolio basis, where the enterprise is held as one of a number of enterprises in a portfolio to select among alternative enterprises or investments.

In financial management, the profit maximization goal can be modified to account for the fact that decision makers actually consider both expected return and risk.

The financial manager is assumed to have a goal of maximizing the *utility* of the owner of the business, where utility is a function of both risk and expected returns.

In this case, *utility* is the capacity of the business to satisfy the profit wants of the owner, *i.e.* maximum return and minimum risk.

The general utility function for a profit-maximizing, risk-averse decision maker is given by

$$U = f(E,V); \quad \text{A}$$

Profit maximizing: $\frac{\partial U}{\partial E} > 0;$ B

Risk-aversion: $\frac{\partial U}{\partial V} < 0$ C

Where U = Utility,

E = Expected return, and

V = Risk

3.4.Measuring Expected Return and Risk

3.4.1.Expected Return

1.The *expected return* of an investment is the probability weighted average of all the possible returns.

There are two measures of returns:

1. monetary terms and 2 rate of return.

1.The monetary return is the amount received less the amount invested.

Although expressing return in monetary terms is easy

2.The rate of return is the monetary returns per unit of investment.

The rate of return standardizes the return by considering the return per unit of investment.

The expected return for a possible return is estimated as

$$E = \sum_{i=1}^{i=n} E_i P(E_i) \quad \text{A}$$

Where E = Expected return

E_i = Possible outcome of return in period (or situation) i

$P(E_i)$ = Probability of occurrence of return E_i.

$i = 1, 2, .. n$

The mean or average value of returns is used as a measure of expected reruns estimated as

$$E = \left(\sum_{i=1}^{i=n} E_i\right) / n \qquad \text{B}$$

Where E_i = Return in year i;

n = Number of observations.

To measure the extent of variability of possible returns from the expected return

1.The variance and

2.Standard deviation measure the extent of variability of possible returns from the expected return.

1. The variance is computed as

$$\sigma^2 = \frac{\sum_{i=1}^{i=n}[(E_i - E)^2 P(E_i)]}{n} \quad \text{a}$$

Where σ^2 = The variance of the return, and

σ = The standard deviation.

Example 1: Assume a single crop A and its hypothetical possible returns (in monetary terms) and the associated probability of occurrence of these returns as indicated in the first two columns of Table 1.

Find :- the expected return, standard deviation, and variance of the returns

Table 1: Estimation of expected return and risk for a single enterprise.

Possible returns, E_i ($)	Probability, (%) $P(E_i)$	Deviation, ($) (E_i-E)	$(E_i - E)^2$	Product $(E_i - E)^2 P(E_i)$
30	0.10	-20	400	40
40	0.30	-10	100	10
50	0.40	0	0	0
60	0.10	10	100	10
70	0.10	20	400	40

- **Solution:**

a.sum is 250

b. the expected return from the business is estimated to be 50.

c. the variance=20 and

d. standard deviation 4.5,

- Expected return will not indicate the variability of the return or the risk associated to the expected return.
- These figures will enable to know the absolute magnitude of returns and variability for a single business.

- This widely used approach for assessing risk is known as *mean-variance approach*.
- However, variance or standard deviation provides a measure of the total risk associated with an enterprise or business.

The total risk comprises two components, namely

1.*systematic risk* and

2.unsystematic risk.

1.Systematic risk is the variability in business returns caused by changes in the economy or the market, whereas

2.unsystematic risk is the risk which is specific or unique to a business firm. Unsystematic risk associated with an enterprise can be reduced by combining it with another enterprise having opposite characteristics. This process is kwon as *diversification*.

Example 2: Assume further, in addition to crop A, that there is a second crop B with possible returns and the probability of occurrence of the returns. For the two cropping alternatives, hypothetical data on 10 years given in Table 2

Table .2: Selection of alternative enterprises (portfolio selection) using expected returns and standard deviation.

Year	Net returns above fixed costs (birr per acre)	
	Return for crop A	Return for crop B
1	136	86
2	88	64
3	104	92
4	148	102
5	62	82
6	176	78
7	192	62
8	142	90
9	48	94
10	34	60
Mean return (E)	113	81
Variance (σ^2)	2657.8	245.8
Standard deviation (σ)	51.5	15.7

Solution: This example illustrates the general problem of selecting a portfolio of risky assets when resources are limited. The limited resource is land, and the risky assets are crops A and B.

The mean annual returns is :-

- 113 for crop A and
- 81 fro crop B.

Using this measure, crop A is more profitable on average.

The standard deviation is

- 51.5 for crop A and
- 15.7 for crop B

Which indicate that crop A is more risky business with a greater degree of year-to-year variability.

Decision Rules for Risk-return Trade-off

- If a producer is assumed to produce, there are several decision rules to follow when choosing between A and B on the basis of expected return and risk
- However, if a choice must be done between two investments which have the expected rate of return but different standard deviation, most people would choose the one with lower standard deviation, and therefore, the lower risk.

- Similarly, given a choice between two investments with the same risk (standard deviation) but different expected rates of returns, investors would generally prefer the investment with the higher expected rerun.

How do we choose between two investments when one has the higher expected rate of return but the other has the lower standard deviation?

- Other measures of risk known as
  - ✓ *coefficient of variation* and
  - ✓ *highest lower bound*.

a. Coefficient of Variation

- desirable to select the alternative that offers the least amount of risk per dollar of net return.
- . The coefficient of variation shows the risk per unit of return, and
- It provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same.
- The coefficient of variation is estimated as the percentage of the standard deviation to the expected return as

- The coefficient of variation is estimated as the percentage of the standard deviation to the expected return as

$$CV = \frac{\sigma}{\bar{E}} \times 100$$

Where CV = Coefficient of variation.

σ = Standard deviation

E=Mean return

Eg.The CV is 48% for crop A and 18% for crop B indicating that crop B offers less risk per dollar of expected return and would be preferred over A

b.Highest Lower Bound

❖ Selecting the alternative with the *highest lower bound*.

$$L = E - 2\sigma$$

Where L = The highest lower bound.

σ = Standard deviation

E=Mean return

- For our hypothetical crop data the lower bounds (in birrs) are
  - ➢For crop A: 113-2(51.5) = 10;
  - ➢For crop B: 81-2(15.7) = 59.6
  - ➢ According to the highest lower bound rule, the decision maker would select crop B in Example 2 because its lower bound is birr 59.6 compared with birr 10 for crop A.
  - ➢ Note that both the coefficient of variation and the highest lower bound have resulted in selection of the same crop B

Diversification

- Both decisions would be rational according to the utility-maximizing approach using the standard deviation as the measure of risk.
- There is a possibility that some combination of crops A and B can be grown, known as *portfolio*.
- *Portfolio*, in financial context, can be defined as a combination of different enterprises, investments, or assets held by an owner which can be evaluated in terms of their combined risks and returns

Diversification among two or more enterprises will generally be desirable if returns tend to be *independent*, or *negatively correlated*.

The *covariance* and the *coefficient of correlation* between two random variables such as net returns of two crops provide statistical measures of

1. the degree of independence if it is less significant, and
2. the degree of interdependence if it is more significant.

a. Covariance

- The covariance is a measure of how returns of two investments move together
- Covariance is the statistical measure that indicates the interactive risk of a business relative to others in a portfolio of enterprises.
- If the returns from the two crops move in the same direction consistently, the covariance would be positive.
- If the two returns move in opposite direction consistently, the covariance would be negative.
- If the movements of returns are independent of each other, covariance would be close to zero

The covariance between the two crops A and B can be calculated using the following formula.

$$CovE_{ab} = \frac{\sum_{i=1}^{i=n}(E_{a,i} - E_a)(E_{b,i} - E_b)}{n}$$

Where $CovE_{ab}$ = The covariance between returns of crops A and B;

$E_{a,i}$ = Net return from crop A at time i;

$E_{b,i}$ = Net return from crop B at time i $(i = 1,2,...n)$;

E_a and E_b = Mean values of expected returns from crops A and B, respectively; and

n is sample size.

Example 3: The two enterprises the covariance analysis. What is the covariance of reruns from crops A and B?

Table 3: Covariance and correlation analysis between returns of crops A and B.

Year (t) (1)	Returns from crop A (2)	Returns from crop B (3)	$E_{a,i} - E_a$ (4)	$E_{b,i} - E_b$ (5)	$(E_{a,i} - E_a)^2$ (6)	$(E_{b,i} - E_b)^2$ (7)	Product of deviations (8 = 4*5)
1	136	86	23	5	529	25	115
2	88	64	-25	-17	625	289	425
3	104	92	-9	11	81	121	-99
4	148	102	35	21	1225	441	735
5	62	82	-51	1	2601	1	-51
6	176	78	63	-3	3969	9	-189
7	192	62	79	-19	6241	361	-1501
8	142	90	29	9	841	81	261
9	48	94	-65	13	4225	169	-845
10	34	60	-79	-21	6241	441	1659
Total	1130	810	0	0	26578	1938	510
Mean	113	81	0	0	2657.8	193.8	51

- The value of the covariance is 51 indicating that the returns from the two crops move together in the same direction.
- The co-movement of the two variables indicates the interdependence of the returns from the two crops.
- The covariance is an absolute measure of interdependence in which case the degree of independence or interdependence, and.
- It is difficult to interpret the magnitude of the covariance term, so a related statistic known as correlation coefficient is generally used to measure the degree of co-movement between two variables

b.Correlation Coefficient

- To facilitate comparison, covariance can be standardized by dividing the covariance between the two returns by the product of standard deviation of the returns from each enterprise, or crop in this case.
- The reason two enterprises can be combined to form a riskless portfolio is that their returns move counter cyclically to each other- when returns from one asset falls, those from the other rise and vice versa
- The reason two enterprises can be combined to form a riskless portfolio
- The tendency of two variables to move together is called correlation, and
- The correlation coefficient a standardized measure used to measure this tendency.
- Values of the correlation coefficient range from r = -1 (perfect negative correlation) to r = 1 (perfect positive

The simple correlation coefficient can be estimated as

$$r_{ab} = \frac{CovE_{ab}}{\sigma_a \sigma_b}$$

Where r_{ab} = Correlation coefficient of net returns between crops A and B, $(0 \le r_{ab} \le 1)$ and n is sample size);

σ_a = Standard deviation of returns of crop A; and

σ_b = Standard deviation of returns of crop B.

- **Example .4:** What is the correlation coefficient between returns of the two crops in Table 3?
- **Solution:** The correlation coefficient between the net returns of crops A and B in Table .3 becomes
- $$r_{ab} = \frac{510}{(163.03)(44.02)} = 0.071.$$
- This value of the correlation coefficient close to zero suggests that diversification between crops A and B would be a useful risk-reducing strategy because of the almost complete lack of correlation between their net annual returns. The correlation coefficient is not also significant indicating that the estimated 7.1% correlation between the two time series returns is not a

UNIT FOUR:
FINANCIAL ANALYSIS OF A FARM BUSINESS

Financial analysis involves maintain and using records and other information needed to measure the financial performance of the business.

A farmer cannot possibly make the intelligent decisions on the allocation and use of capital unless adequate information regarding the current financial condition and past progress of the operation is at hand.

- **Financial statements** report both on a farm's position at a point in time (**the balance sheet**) and on its operations over some past period **(the income statement and statement of cash flows**).
- However, **the real value of financial statements lies in the fact that they can be used to help predict future earnings**.

The most widely used financial statements are

- the balance sheet,
- income statement, and
- cash flow statement

1.The balance sheet:-

The balance sheet shows **assets**, **debts outstanding, and owner equity** as of a specific date.

The primary purpose is to measure the **financial structure** and **solvency of the business** or the extent to which outstanding debt obligations would be covered if assets were liquidated

- The balance sheet known as a net worth statement, is a summary of the assets and liabilities of the business, together with a statement of the owner's equity or net worth.
- Its primary function is to measure risk-bearing ability or financial solvency.
- It shows the margin by which debt obligations would be covered if the business was terminated and all assets sold.
- The balance sheet also indicates the financial structure of the business, i.e., liabilities that must be repaid within the current year, liquid assets available for sale to pay current obligations, and long-term obligations and assets.
- The balance sheet is a comparatively simple statement commonly used in the business world.

Balance sheet equation

$$Assets = Liabilities + Owner\ \ equity \qquad (4.1)$$

Thus the balance sheet is always divided into three parts:

- the assets or value of things owned;
- the debts owed (liabilities); and
- the difference between items 1 and 2, which is the owner's equity (or deficit if debts exceed assets). This last item makes the statement balance.

From The balance sheet for a hypothetical farm known as Highland Farms as of December 31, 2004 is shown in Table 4.1.

- The first point to observe is the date.
- close of business on December 30, 2005, and
- the beginning of business on January 1, 2005.
- Since the ending of one year is the beginning of the next,

Table 4.1: Balance sheet for Highland Farms. January 1, 2005.

Assets		Liabilities and owner equity	
Cash	1,000	Accounts payable	1.600
Grain and hay	35,207	Bank note	56,290
Livestock	35,565	Real-estate contract	118,300
Machinery	27,368	Total	176,190
Insurance	2,700	Owner equity	213,650
Total	389,840	Total	389,840

Form Table 4.1:-

The assets or items owned on January 1, 2005, on the left side of the statement(total assets birr 389,840).

On the right side of the statement are the debts owed, total birr 176,190.

The difference between the assets and the debts outstanding is birr 213,650(equity or net worth of Highland Farms).

4.1.1. Assets

- Assets are classified according to the time required to convert them into cash with a minimal loss.

To facilitate financial analysis, it is best to place assets into three major categories:

a) current assets,

b) intermediate assets, and

c) long-term or fixed assets.

a)Current assets include cash and inventory items that will be converted into cash during the year in the normal course of business.

- Include grain and forage inventories as well as chemicals, supplies, and feeder or market livestock that will be sold during the upcoming year.

b)Intermediate assets include those resources used to support farm production that will not be sold or converted into cash during the coming year, such as breeding stock, machinery, and equipment.

Intermediate assets typically have a useful life of one to ten years and are part of the productive plant (as contrasted with inventory) of the farm business.

c)Long-term or fixed assets are also part of the productive plant, but more permanent in nature and consist primarily of farmland and improvements.

4.1.2. Liabilities

classification :-

a) current liabilities,

b) intermediate-term liabilities, and

c) long-term liabilities.

a) Current liabilities are the debts payable on demand or within the operating year, normally 12 months.

Examples include operating notes, cattle notes, accounts payable, and taxes

b) Intermediate-term liabilities include loans for farm improvements, equipment purchases, and breeding stock and usually have a term of 1 to 7-10 years.

c) Long-term liabilities include obligations on fixed or long-term assets such as real-estate mortgages and land contracts.

Remember that the amount of the payment due on intermediate-term and long-term obligations this year is included as a current liability and so should not be included in intermediate-term and long-term category.

The balance sheet of Table 4.2 illustrates the structure and classification of assets and liabilities in more detail.

Table: 4.2: Balance sheet for Highland Farms, January 1, 2004

Assets		Liabilities and owner equity	
Current		*Current*	
Cash	1,000	Accounts payable	1,472
Corn, 6800 ton	17,000	Bank note, feeder cattle	7,800
Oats, 400 ton	560	Bank note, operating	25,121
Soybeans, 2100	9,660	Portion of intermediate-term due this year	1,040
Silage, 130 ton	2,730	Portion of long-term due this year	6,600
Hay, 45 ton	1,925	Total	42,033
Feeder cattle, 81, head	11,692	*Intermediate*	
Market hogs, 208 head	10,400	Tractor and machinery	1,040
Total	54,967	*Long-term*	
Intermediate		Real-estate contract	118300
Beef cows, 33 head	7,260	TOTAL LIABILITIES	161,373
Bulls, 2 head	1,000	OWNER EQUITY	138845
Sows, 31 head	4,960	TOTAL LIABILITIES AND OWNER EQUITY	300,218
Boars, 2 head	400		
Machinery, trucks, auto	12,931		
Total	26,551		
Fixed			
Real-estate and buildings, 320 acres (cost – birr 184,000)	216,000		
Other			
Cash value of life insurance	2,700		
TOTAL ASSETS	300,218		

4.1.2.Balance Sheet Ratios

Ratio comparisons can be made against other farm firms, but some of the most valuable comparisons are among ratios for the same firm over time.

A) ***Current ratio:*** A classic measure of financial condition used in balance sheet analysis is the current ratio (CR), which indicates the extent to which current assets, if liquidated, would cover current liabilities outstanding computed as

$$CR = \frac{Current\ \ Assets}{Current\ \ Liabilities} \qquad (4.2)$$

- Standards :-

a) Good or minimum acceptable current ratio \

   - ❖ 2 to 1 ratio (birr 2 of current assets for each birr 1 of current liabilities) is frequently used, but this standard may be too high for larger farm firms.

b) A ratio below 1 to 1 would be unacceptable

Example 4.1: Consider the balance sheet in Table 4.2. Compute the current ratio for Highland Farms.

$$CR = \frac{Current\ \ Assets}{Current\ \ Liabilities}$$
$$= \frac{54,967}{42,033} = 1.31$$

B) Working capital

Another measure of current liquidity is working capital or current assets minus current liabilities.

- Working capital measures the amount of funds that would be available to purchase fertilizer, chemicals and other inventory items from the sale of current assets after all current debts have been paid.

C)Current debt versus owner equity:

- which provides some indication of the ability to pay off obligations either by liquidating assets or by borrowing.
- If the operator has a large net worth, he may be able to borrow additional funds against long-term assets such as real-estate and restructure the debt from short- to long-term if necessary.
- For instance, the current debt and the owner equity for Highland Farms are birr 42,033 and birr 138,845, respectively.
- This indicates that the farm has higher owner equity and fixed assets enabling it to borrow funds to overcome short-term obligations.

D)***Intermediate ratio:*** The intermediate ratio (IR) is used to reflect the intermediate liquidity position of the business in much the same way as current ratio is used in the short-run:

$$IR = \frac{Total\ \ Current\ \ and\ \ Intermediate\ \ Assets}{Total\ \ Current\ \ and\ \ Intermediate\ \ Liabilities} \qquad (4.3)$$

Over an intermediate period of time both current and intermediate assets will be converted into cash in the normal operation of the business. The ratio reflects the likelihood that cash derived in this process will be adequate cover debt payments coming due during the same time.

$$IR = \frac{Total\ \ Current\ \ and\ \ Intermediate\ \ Assets}{Total\ \ Current\ \ and\ \ Intermediate\ \ Liabilities}$$
$$= \frac{54{,}967 + 26{,}551}{42{,}033 + 1{,}040} = \frac{81{,}518}{43{,}073}$$
$$= 1.89$$

***Net capital ratio*:** The long-term solvency position of a business is indicated by the net capital ratio (NCR):

$$NCR = \frac{Total\ \ Assets}{Total\ \ Liabilities} \qquad (4.4)$$

Measure of overall financial position on the business because it reflects the likelihood that the sale of all assets would produce sufficient cash to cover all debt outstanding.

N.B.The net capital ratio will be reduced if there is any major expansion using debt, because the purchase of additional assets does not change the equity base of the farm but increases both assets and debt.

$$NCR = \frac{Total\ \ Assets}{Total\ \ Liabilities} = \frac{300{,}218}{161{,}373}$$

$$= 1.86$$

Debt-to-equity ratio (DER): Measure of solvency is the ratio of total debt (liabilities) to owner equity:

$$DER = \frac{Total\ \ Liabilities}{Owner\ \ Equity} \qquad (4.5)$$

Relatively large real-estate debt incurred by use of purchase contracts may cause a farmer's debt-to-equity ratio to be high(it takes time) and periodic payments will gradually reduce this debt..

Example 4.4: Consider the balance sheet in table 4.2. Based on the table, compute the debt-equity ratio.

Solution: The debt-to equity ratio is computed as

$$DER = \frac{Total\ \ Liabilities}{Owner\ \ Equity} = \frac{161,373}{138,845}$$

$$= 1.16$$

- **Equity-to-value ratio (EVR):** Equity is often related to the value of assets. This ratio is:

$$EVR = \frac{Owner \quad Equity}{Total \quad Assets} \qquad (4.6)$$

- Equities of less than 40%-50% of value of the assets are usually scrutinized (analyzed)with extreme care by lenders.
- But this figure is by no means a strict borderline.
  - ❖A 20% equity position for a well-managed farm business may be safer than a 60% equity where the management is questionable.
  - ❖The types of assets involved also have a bearing on the size of ratio that may be considered safe.
  - ❖While the equity-to-value ratio may be used to reflect overall financial strength,
  - ❖Used to depict owner equity in an individual item

4.2. Return Analysis
4.2.1. The Income Statement

- The primary objective of the income statement is to show the income produced and expenses involved in the operation of the business during the period covered by the statement, together with the net income (or loss) that is realized.
- Income statement provides a measure of return from the business or the ability to meet financial obligations such as debt payments, rent, payroll, and other expenses during the year.
- Income statement reveals the success or failure of a farm business over time as well as the costs and returns associated with the use of varying amounts of capital and credit.

- Preparation and analysis of an income statement for a typical farm business can be accomplished using a single-entry accounting system that lists the receipts and expenditures in general categories.
- However, even a single-entry system may appear to be a complex and involved undertaking due to the wide range of activities included in the farm business.
- An income statement, also called a profit and loss statement, is a measure of receipts and gains during a specified period, usually year, less expenses and losses during the same period, with net income or loss as a result.

4.2.1.1. Receipts

- Receipts are derived from sales of crops, livestock, and livestock products during the year and also from government payments and miscellaneous sources.
- On Highland Farms, receipts from these sources total birr 74,498 in 2004 (Table 4.3).
- Any farm products used in the home should be valued and also included in receipts.

- The objective of the receipts section in the income statement is to show as accurately as possible the gross production of the farm, in monetary terms, during the year.
- Therefore, adjustments should be included to account for changes in the inventory value of livestock, crops, and other liquid assets during the year.
- The procedure of adjusting cash receipts for changes in inventory to determine gross income is called the accrual method of accounting.
- While relatively few farmers use the accrual basis to report income for tax purposes, recognition of inventory changes is very important in accurately analyzing the financial performance of a business

Table 4.3: Income statement for Highland Farms, for year ended December 31, 2004.

RECEIPTS			
Livestock sales			
Cattle	28,045		
Hogs	36,173		
Total	64,218		
Crop sales	9,450		
Government payments	...		
Miscellaneous income	830		
Gross cash receipts			**74,498**
Increase (decrease) in current inventory			3,8555
Less Livestock purchased		10,381	
Feed purchased		12,675	
Gross income			**55,297**
OPERATING EXPENSES			
Machinery and power (fuel, lubricant, repairs)		8,630	
Hired labor		1,476	
Livestock (feed, veterinary, expenses, etc.)		1,416	
Seed, fertilizer, herbicides, lime, etc.		8,546	
Interest on operating loans		2,635	
Utilities		958	
Miscellaneous		820	
Total operating expenses			**24,481**
NET OPERATING INCOME			**30,816**
FIXED EXPENSES			
Property taxes		2,401	
Interest on intermediate- and long-term debt		9,299	
Repairs and insurance		2,401	
Depreciation on intermediate assets		4,233	
Depreciation on fixed assets		1,000	
Total fixed expenses			**19,334**
NET FARM INCOME			**11,482**

- The sum of total receipts plus changes in inventories for farms with large purchases of feeder livestock and feed overstates the income actually produced on the farm.
- It is customary, therefore, to correct this overstatement by deducting purchases of livestock and feed to obtain gross income.
- The purchase of livestock for Highland Farms in 2004 totaled birr 10,381 and feed amounted to birr 12,675.
- These amounts deducted from birr 78,353 left a gross income of birr 55,297 for the year.

- For purposes of financial analysis, receipts from the sale of assets such as real-estate or machinery are generally not considered as income, since such income is not really produced or earned during the period.

4.2.1.2. Expenses

- All expenses or costs involved in the operation of the business during the period covered by the income statement should be included.
- Thus all operating and fixed expenses are entered.
- However, capital expenditures to purchase fixed and working assets such as real-estate, machinery, milk cows, and breeding stock are excluded, since such items usually are used in the business for several years.
- The depreciation that occurs on these items during the period covered by the income statement is an expense, however, and should be included.

- Operating or variable costs and fixed costs are shown separately in Table 4.3.
  - Operating expenses or costs include items such as seed, fertilizer, and fuel, which vary with the level of production.
  - Fixed expenses such as depreciation, taxes, insurance, and interest on intermediate-term and long-term debt remain relatively constant regardless of the level of production.

4.2.1.3. Net income

- Three net income (loss) figures are useful in analysis of the business:
  - net cash income;
  - net operating income; and
  - net farm income

Net cash income equals cash receipts less cash expenses during the period covered by the income statement.

The net cash income figure provides an indication of the annual net cash flow of the business.

Net operating income is computed by subtracting operating expenses from gross income.

The net operating income of Highland Farms was birr 30,816 in 2004 as indicated in Table 4.3.

Net farm income is computed by deducting fixed costs from net operating income. The net farm income of Highland Farms amounted to birr 11,482 in 2004.

It represents more accurately than the other two the true return of the business during the period covered by the income statement

4.2.2. Financial Analysis of Income Statements

- Analysis of financial relationships in the income statement provides information concerning performance of the farm business in addition to that obtained directly from the statement.
- However, when a basis for comparison is available, pertinent ratios provide useful information.

- Income statement ratios can be divided into two categories:
  - those that relate expenses to gross income, and
  - those that relate income to capital investment.
- Six of the common income ratios including
  - operating ratio
  - fixed ratio
  - gross ratio
  - capital turnover
  - rate of return on capital
  - rate of return on equity

4.2.2.1. Expense-to-income ratios

Expense-to-income ratios are used to measure the input-output efficiency of the business; *i.e.*, they measure the margin by which the value of total production exceeds production costs.

Controlling expenses in relation to income is one of the keys to a profitable farm operation.

***Operating ratio*:** The operating ratio (OR), as the name implies, relates variable or operating expenses to gross income:

$$OR = \frac{Total\ \ Operating\ \ Expenses}{Gross\ \ Income} \qquad (4.7)$$

Example Consider the income statement in Table 4.4. Based on the table, compute and interpret

Solution

a) The operating ratio is computed as

$$OR = \frac{Total\ \ Operating\ \ Expenses}{Gross\ \ Income}$$

$$OR = \frac{24,481}{55,297}$$

$$= 0.44$$

In 2004 Highland Farms had an operating ratio of 0.44. This means that total operating expenses amounted to 44 cents per birr of gross income.

Fixed ratio: The fixed ratio relates fixed expenses to gross income:

$$FR = \frac{Fixed\ \ Expenses}{Gross\ \ Income} \qquad (4.8)$$

b) The fixed ratio is computed as

$$FR = \frac{Fixed\ \ Expenses}{Gross\ \ Income} = \frac{19{,}334}{55{,}297}$$

$$= 0.35$$

In 2004 Highland Farms had a fixed ratio of 0.35 which means that fixed or overhead expenses such as property taxes, insurance, depreciation, and interest on debt amounted to 35 cents per birr of gross income.

Gross ratio: The operating and fixed ratios comprise the gross ratio (GR):

$$GR = \frac{Total \quad Expenses}{Gross \quad Income} \qquad (4.9)$$

The gross ratio is computed as

$$GR = \frac{Total \quad Expenses}{Gross \quad Income} = OR + FR$$

$$= \frac{43{,}815}{55{,}297} = 0.44 + 0.35$$

$$= 0.79$$

This means that gross ratio of Highland Farms in 2004 amounted to 0.79 indicating 79 cents total expense per birr of gross income. Alternatively, net farm income of Highland Farm in 2004 amounted to about 21 cents per birr of gross income.

4.3. Repayment Analysis

4.3.1. The Cash Flow Statement

- The cash flow statement, also known as a sources and uses of funds or flow of funds statement, summarizes all cash transactions affecting the business during a given period such as a month, quarter, or year.
- The balance sheet and income statement are important tools for measuring the financial position and progress of the business.
- However, many farm lenders have experienced situations where a borrower has a good balance sheet and a high net farm income but is constantly slow in meeting financial obligations.
- This rather perplexing situation can frequently be diagnosed and resolved by analyzing the cash flow of the business.

- The income statement is the starting point for the cash flow statement; however, the two statements differ in their treatment of several important accounting entries.
- A complete cash flow statement or budget will include several nonfarm business items such as taxes, nonfarm income, and living expenses.
- Cash withdrawals for management salary and stock dividends would correspond to family living expenses in an incorporated farm business.
- Cash flow analysis also gives a more complete accounting of debt transactions by showing principal payments and interest payments.
- The cash flow statement or budget reflects the cash transactions that occur with the purchase and/or sale of capital items such as breeding livestock, machinery, and real-estate

4.3.2. Sources and Uses of Funds

- The sources and uses of funds for Highland Farms are summarized in Table 4.5 the year ended December 31, 2004.
- Note that total cash inflows (or sources of cash) are equal to total cash outflows (or uses of cash).
- sources and uses major characteristics of cash flow analysis and show its relationship to the balance sheet and income statement.
- Cash receipts and cash operating expenses were taken directly from the income statement and are reflected as cash inflows and cash outflows, respectively.

The following are specifically indicated in the cash flow statement, unlike the income statement, of Highland Farms

- Capital purchase of a tractor as a cash outflow
- Family living expenses and income taxes
- Cash and credit transactions of the business during the year.

UNIT FIVE:
RISK MANAGEMENT STRATEGIES AND INSURANCE IN AGRICULTURE

Business firms encounter two kinds of risk—business and financial.

- Business risk refers to the variation in net income resulting from the type of business (product line, enterprise combination, etc.) in which the firm is engaged.
- Financial risk refers to the relatively greater loses that occur under unfavorable business conditions.

5.1. Sources of Risk and Uncertainty in Agriculture

six different kinds of change or uncertainty faced by farmers. These are:

- ❖production uncertainty,
- ❖price uncertainty,
- ❖causality risk,
- ❖technological uncertainty,
- ❖uncertainty caused by actions of others, and
- ❖personal uncertainty,

5.1.1. Production Uncertainty

- Production uncertainty is caused by variations in weather and by diseases, insects and other biological pests.
- Production uncertainty in crops is concentrated particularly in those areas where weather is unstable.
- These are high-risk areas because of their great variability of production.
- When yields are below normal, income may be inadequate to cover costs and, as a result, cash deficits accumulate.
- Livestock enterprises also involve production uncertainty. Death losses from diseases and adverse weather conditions are common.

5.1.2. Price Uncertainty

- Closely associated with weather and other natural hazards is the risk of price fluctuations.
- Low levels of production are generally associated with higher prices; however, this generalization may not hold for the individual farmer.
- Price uncertainty always has been a major consideration in farming, and farm commodity prices have fluctuated dramatically in recent years.

Many forces cause prices to fluctuate, such as

- production of other farmers, and
- changes of consumer tastes.

5.1.3. Causal Risk

Property losses due to fire, flood, windstorms, theft, etc., are a source of risk in any business.

Causality losses can generally be covered by insurance; however, income may still be reduced by the interruption of normal business activity that often follows a major loss.

5.1.4. Technological Uncertainty

- Another type of uncertainty arises from the development and adoption of new techniques or methods of production.
- New crop varieties, chemicals, feed combinations, models of machines, and the like are continually being developed by research workers and business concerns. While theses new developments usually are based on approved experimental procedures, the results realized may be different on a given farm from those expected.
- The rapidity of technological change can also continue to uncertainty.

5.1.5. Uncertainty Caused by Actions of Others

- The course of action followed by firms and agencies with whom the farmer does business causes uncertainty.
- If the farmer requires part of his capital by renting, for example, the possible future action of the landlord creates uncertainty.
- The landlord may decide to increase the rent, rent to a relative, or sell the farm.
- If such things should occur, they might reduce the tenant's earning capacity .
- Similarly, if the farmer obtains capital by borrowing, uncertainty may be caused by not knowing just what the lender will do.

5.1.6. Personal Uncertainty

- No one knows what the future health of family members will be, i.e., when a serious illness may occur or when death will take family members who are important to the farm business operation.
- Medical and hospital expenses caused by a major illness may be substantial.
- When the farm operator is harmed, income suffers from loss of labor and management in the business.
- Uncertainty arising from family health is of a major importance in the farm business and should be fully recognized in considering risk-bearing ability

5.2. Evaluating and Reducing Risk and Uncertainty

5.2.1. Analyzing Risky Situations

The first steps in risk management are to assess one's attitudes toward risk and to develop a framework or set of rules for examining risky situations.

Most managers exhibit risk-averse behavior.

Moreover, individuals differ in their degree of risk-aversion—some requiring greater compensation than others to assume a given increase in risk.

The choice among the alternatives may be conducted using decision trees or decision rules.

5.2.1.1. Decision tree

A *risky situation* can be defined as one in which the actual outcome may differ from the expected outcome.

A *decision tree* is one method of examining the range of outcomes of a risky situation.

The main value of decision trees may well be that their construction requires the manger to express all relevant alternative actions, events and events occur.

EG.Consider a farmer who has 1000 quintals of corn on hand.

The marketing alternatives are:

- to sell the corn now for birr 2 per kilogram,
- to store the corn for future sale, or
- to feed the corn to 100 hogs.

Example

A. If the corn is stored for later sale, the possible net prices (after paying storage costs) and the associated probabilities (which reflect the decision maker's evaluation of the likelihood of occurrence for each possible outcome) are indicated in Table 5.1.

B. The prices of hogs in birr per head in the three market conditions are also indicated.

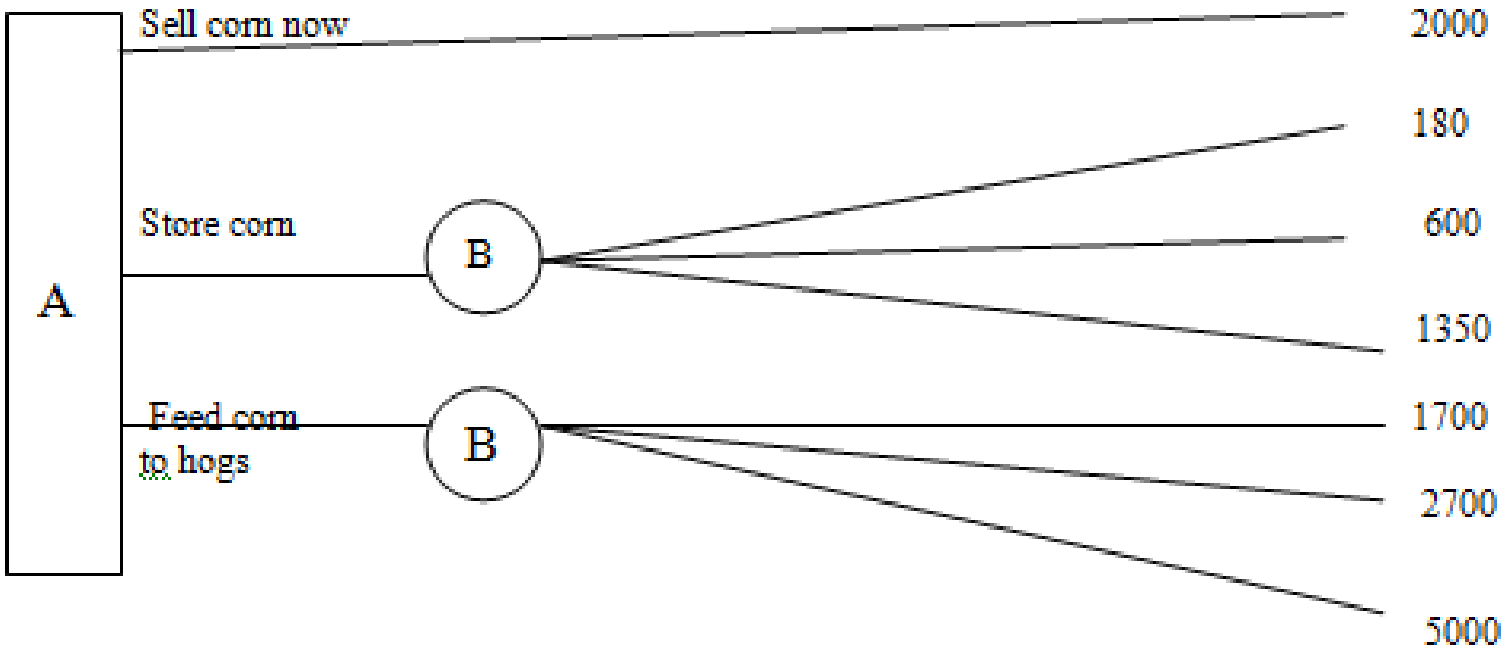
Total direct costs for feeding 100 hogs, excluding corn, are birr 7000.

Table 5.1: Probability of occurrence of selling prices in different market conditions of corn and hog marketing.

Market condition	Probability of occurrence	Sale price per unit	Expected return (birr)
Sell corn now	1.0	2.00	2000
Store corn			
Situation 1	0.1	1.80	180
Situation 2	0.3	2.00	600
Situation 3	0.6	2.25	1350
Gross income			2130
Feed corn to 100 hogs			
Situation 1	0.2	85	1700
Situation 2	0.3	90	2700
Situation 3	0.5	100	5000
Gross income			9400
Net income (gross income less direct costs)			2400

The three possible courses of action are represented by three act branches emanating from A, the node of the act fork. In this example, the possible outcomes in terms of net income. However, the "best" decision cannot be identified unless one has a rule for selecting among the alternatives.

Figure 5.1: decision tree for hypothetical corn marketing problem



5.2.1.2. Selection rules

These rules depend upon the decision maker's attitude toward risk. Based on the attitudes toward risk, selection criterion might be *maximin*, *maximax* or *safety-first* rule

***Maximin rule*:** Some conservative decision makers appear to use a *maximin* rule (maximum of the minimum), which results in selection of the alternative with best of the worst outcomes.

In this example, the maximin rule would result in the choice of selling the 1000 quintals of corn now for birr 2 per kilogram because the worst (and the best) outcomes for this alternative is birr 2000.

Maximax rule: A risk seeker might use the maximax rule (maximum of the maximum), which leads to the alternative with highest possible income.

Example, the maximax rule would result in deciding to market, even though this alternative could result in a return of as little as birr 1500.

Consider, however, a situation where the decision maker believes that a return of at least birr 2500 is needed to stay in business. In this example, feeding the corn to hogs offers the only possibility of staying in business.

Moreover, feeding hogs gives a 50% probability of achieving this goal.

***Safety-first rule*:** The safety-first rule represents a compromise(cooperation) between the maximin and maximax rules.

With a safety-first approach the alternative with highest expected return is selected, subject to an acceptably low chance that the income will fall below some minimum level.

The hog-feeding alternative would be ruled out because it involves a 20% chance that the income will be less than birr 1700.

Storing the corn would be the best alternative; it offers a higher expected return than does selling the corn now, but the probability that income will fall to the birr 180 disaster level is only 10%.

5.2.2. Strategies to Reduce Risk and Uncertainty

Risk and uncertainty cannot be totally eliminated. However, risks can be reduced, and there are several strategies for improving one's ability to withstand adverse business conditions.

Reduce risk and uncertainty. These include the following:

a. Financial strategies,

b.marketing strategies, and

c. Production strategies.

5.2.2.1. Financial Strategies

These strategies include:

- cash reserves,
- non-cash reserves,
- reserve borrowing capacity, and
- investing in high-yielding investment alternatives.

5.2.2.2. Marketing Strategies

Thus many producers as well as processors and wholesalers of agricultural commodities use strategies such as hedging, options, forward contracting, and spreading of sales or purchases to protect themselves against price changes. .

Hedging: Hedging on the futures market allows buyers and sellers to establish now the prices of products they intend to buy or sell on some future date.

Commodity options: Commodity options offer sellers and buyers of many farm commodities an opportunity to ensure against adverse price movements without eliminating the possible gains from favorable price movements.

Forward contracting: Forward contracting is another method locking in prices. For many farmers forward contracting has some important advantages over hedging or options because problems such as an unstable basis, margin calls, premiums, or the minimum size of the contract are eliminated.

Spreading sales: spreading sales is a marketing technique that can be

5.2.2.3. Production Strategies

Diversification: is one of the more common methods employed to alleviate risk and uncertainty.

- Having more than one enterprise in the farm business, the chance of a large loss from a given hazard is reduced.

Flexibility: As time passes and added information is obtained, a flexible business can be adjusted to meet new circumstances, Flexibility in organization of a farm business can be of three types:

- ❖time flexibility,
- ❖cost flexibility, and
- ❖product flexibility.

Time flexibility refers to the time involved in producing a product.

Cost flexibility is attained by keeping fixed costs low in relation to total costs.

Product flexibility refers to the possibility of adjusting the product produced to meet changing conditions.

5.3. Insurance in Agriculture

Insurance serves one basic purpose – to provide protection against economic losses arising from adverse events.

Automobile insurance protects the policyholder against losing the asset itself because of accident, theft, fire, or other calamity.

In addition, the liability component of auto insurance protects the policyholder's other assets and future income against claims for damages or injuries suffered by others.

The basic purpose of life insurance is to protect surviving dependents against the loss of income and added expenses that occur when a family member dies.

❖ 5.3.1. Pooling of Risks

- ❖ Insurance is the combining or pooling of enough small unpredictable risks so that annual losses for the combined group become statistically predictable.
- ❖ The **basis of all** insurance is the "law of large numbers," which may be stated as follows: actual results tend to equal expected results as the number of cases increases.
- ❖ What is a burdensome risk for the individual becomes in the pool an easily carried, relatively constant, annual loss expense for the insurance agency.
- ❖ By paying a proportionate share of the losses for the group as a whole plus a share of the expenses of running the company, it is possible for a person to avoid the burden of a loss that, if borne alone, might cause business failure or a major financial setback. The premium paid by the individual can be charged as an expense to take care of the particular risk involved.

5.3.2. Insurable and Non-insurable Risks

Some risks are more easily insured than others. Why it is so? These factors are:

Predictability: An event is insurable if the probability of its occurrence can be predicted and the cost of the event to the insured party can be determined.

Size of loss: Generally, the loss must be important enough to cause economic hardship to the insured.

For this reason most insurance policies have deductive amounts to avoid the expense of processing small claims.

Moral hazard: There must also be little or no "moral hazard", *i.e.*, the risk must generally be accidental in nature, and the availability of insurance coverage should not reduce the incentive of the insured to prevent the loss or induce the insured to cause the loss to occur to collect the insurance fraudulently. The degree to which these conditions hold determines in large measure whether the risk can be feasibly covered by insurance.

Isolated risk: Natural hazards vary in their insurability. Where the occurrence of the risk is isolated, as with the usual farm fire, a local insurance company covering a county can handle most of the risks.

But where the occurrence might be widespread, a state or nationwide unit is better able to handle the risk.

Crop failures due to drought that may cover wide areas are difficult to predict.

- As a consequence neither local nor state units are big enough to do the insuring. Only a nationwide agency can cope with this type of risk.
- ***Predictable frequency and volume of cases:*** Personal hazards such as illness, accidents, and death lend themselves to insurance because they occur with predictable frequency when large numbers are included. It is unlikely that all individuals in any one area will be affected.

Cont----------

- ***Widespread and unpredictable risk:*** Price fluctuations do not lend themselves to insurance as well as natural hazards because they are not as predictable and are likely to affect wide areas or even the whole nation at the same time.
- Prices do not oscillate about a predictable average because they are the result of unpredictable factors such as weather conditions and other natural hazards as well as regulations, and the like. It is true that normal prices are estimated, but there are no forces that make prices average this normal over time. Hence any agency that attempts to insure against low prices has little actuarial basis on which to operate. Therefore, central governments are the only agencies with a large enough resource base to attempt any sizable program of price insurance.

UNIT SIX
CREDIT INSTRUMENTS AND FINANCIAL MARKETS

- The financial institutions serving agriculture are part of the national and international capital markets and must operate within legal constraints and regulations developed by various state and federal government agencies.
- The national and international dimensions of the financial market suggest that agriculture and farmers are affected to changes in economic and financial conditions in other sectors of the economy.
- Changes in government monetary policy that result in money or credit contraction or expansion will influence the availability and cost of funds to farmers.

6.1. Credit Instruments and Contracts

- The use if credit involves what might appear to be a bewildering array of laws, regulations, and forms.
- Borrowers and lenders should recognize that proper legal documentation is necessary to define the right and obligations of both parties.
- It is most important that all legal documents involved be studied carefully, and qualified legal counsel should be sought where necessary

6.1.1.1. Characteristics of contracts

Nearly all business transactions such as buying and selling, leasing, lending and borrowing, etc., constitute a contract, which is merely a legally binding agreement between two or more parties.

The four basic and essential elements of any contract are

1.Legally competent parties: The parties to a contract must be legally competent. Generally, minor children and the insane or mentally retarded cannot enter into a contract because they are assumed to be incapable of fully understanding the implications.

2. *Legal and proper subject matter:* The subject matter of the contract must be legal and proper. Contracts that are themselves illegal (e.g., a price fixing agreement in a free marker economy) or require one or more parties to commit an illegal act are not legally enforceable in a court of law.
3. *Offer and acceptance of the contract:* There must be evidence that all parties willingly consented to the agreement, as evidenced by an *offer* and an *acceptance*.
4. *Consideration:* There must be consideration, which in essence means that something of value must be received and/or given up by both parties.

In general with some exceptions, contracts do not have to be in writing to make them legally enforceable.

However, virtually all loan contracts are in written form. As a practical matter all contracts should be written to minimize the possibility of misunderstanding.

6.1.1.2. Credit instrument

***1.Promissory note*:** A promissory note is the primary legal document in most loan contracts.

- It is the written promise of the borrower to repay the loan.
- When advancing loan funds, the lender receives in exchange a note signed by the borrower promising to pay the lender a certain stated principal amount with interest on a certain date or dates as specified in the note.

2.Real property*:** used to transfer ownership of real property. The *mortgage(**Collateral) is the instrument used to "perfect" (to bring into conformity with low) the lender's (mortgagee's) security interest in real property owned by the borrower (mortgagor).

3.Personal property: This includes both tangible and intangible properties.

Tangible personal property

- ❖ consumer goods,
- ❖equipment,
- ❖farm products, and

Intangible personal property includes

- ❖ negotiable instruments such as notes, bonds, stock certificates,
- ❖ documents of title (warehouse receipts, dock receipts, gin tickets
- ❖contract rights, and other intangibles.

It should be noted that the use of these credit instruments to get farm loans is determined by the laws and regulations in the country.

- ***Other credit instruments*:** A large number of written instruments may be encountered in farm credit transactions.
- Of theses the most important are abstracts, title insurance, liens, waivers, nondisturbance agreements, assignments, and releases

A real-estate *abstract* contains a brief account of all deeds/works on, mortgages, foreclosures, and other pertinent facts that affect the title/owner of land to the land.

- *Title insurance* It is used by a licensed title insurance company upon payment of a premium and insures the buyer or mortgagee against defects in the title other than those that may have been specifically excluded.
- A *lien* is tax liens generally arise from property taxes. A claim to insure payment for work done on a property is also a lien.
- A *waiver* is a lender will make loan only if parties having priority claims or liens waive their interest in property offered as security for the loan.
- *A non disturbance agreement* is a promise by one lender to a second lender that no action will be started against the borrower during a stated time

6.2. Financial Markets and Intermediation

- The financial market (also referred to as the capital, credit, funds, or money market) includes all transactions in financial instruments.
- These financial instruments include currency, bank deposits, charge accounts, loans, mortgages, bonds, and shares of corporate stock.
- Farmers and farm lenders are participants in this market.
- Financial markets have two basic functions:
  - to transfer funds from suppliers to users, and
  - to ration funds among users.
- The return of funds from users to suppliers also is a function of the financial market.

6.2.1. Transfer of Funds

The transfer of funds from suppliers to user is essential to the functioning and growth of a market economy..

Two basic economic functions are involved in the transfer of funds that in turn are package and loaned.

1. primary market activities, and
2. secondary market activities.

1.Primary market activities: The funds may be acquired, as from an individual who deposits funds in a bank, or they may be acquired by selling a new issue of a financial instrument in which case an intermediary is involved.

These transfers are often referred to as *primary market activities* because they involve the acquisition of new funds and the issuing of new financial instruments.

2.Secondary market activities: The second transfer function consist of the allocation of outstanding financial instruments among financial units, such as those reflected by quotation in financial papers.

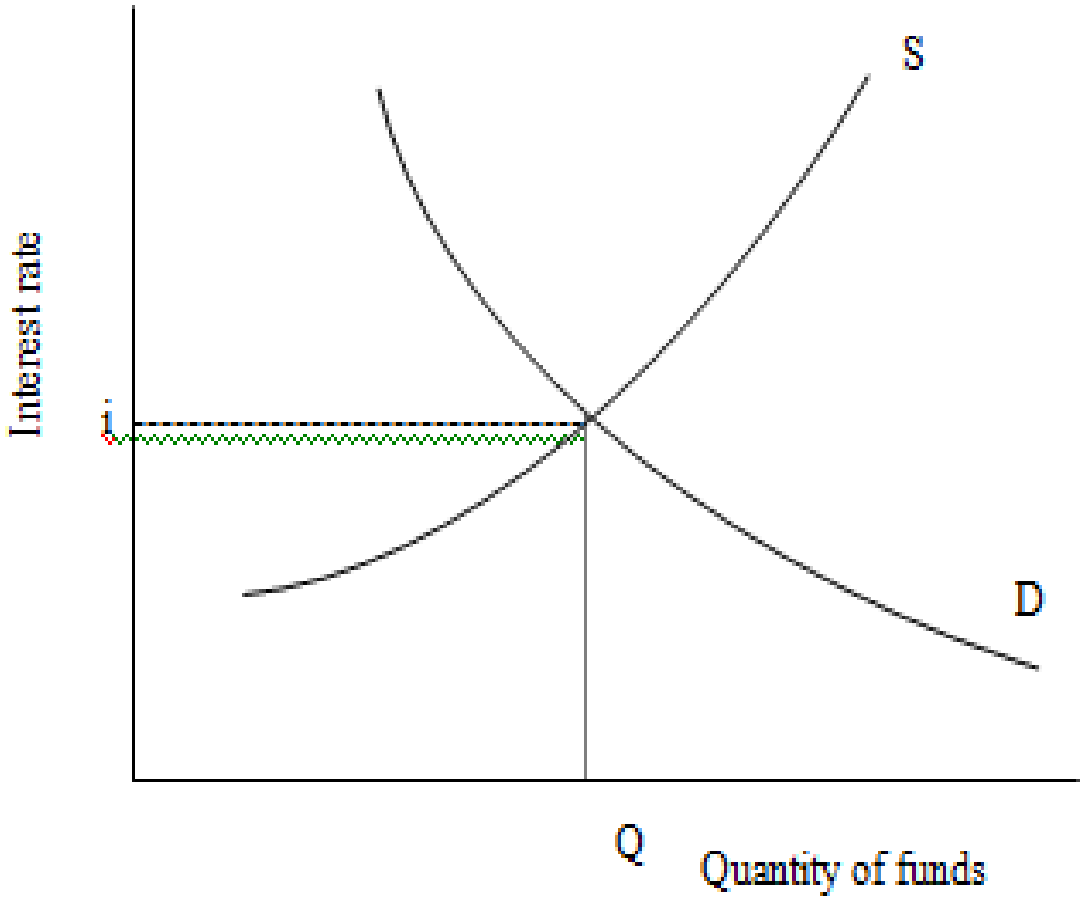
- This function does not involve the issuing of new instruments but the buying and selling of instruments that are already in the market.
- The transfers usually involve the services of an agent such as a broker or dealer in securities.
- Transactions of this type, generally referred to as secondary market activities, are essential to provide liquidity

6.2.2. Rationing Funds

- A second basic function of financial markets, as of any market, is to allocate scarce resources among competing ends.
- Through the operation of financial markets, the limited supply of available funds is allocated to farmers and other economic units that need them.
- If the markets function well, the funds will be allocated to uses yielding the highest returns for a given level of risk.
- The allocation will be optimized when the marginal productivity of funds is equal for all uses.

- The market mechanism for rationing funds among users is based on the concepts of demand and supply.
- The demand function or curve for funds indicates the amount that buyers or users desire at various interest or yield rates and repayment terms at a given time.
- As indicated in Figure 6.1, the demand curve (D) is downward sloping in traditional fashion.
- The supply function or curve (S) provides the amount suppliers are willing to provide and is upward sloping, indicating the increased cost that is necessary to supply increasing amounts of funds to the market.
- The intersection of the two curves indicates the equilibrium quantity Q of funds that are transferred from suppliers to users (demanders) and the equilibrium interest rate i or yield and terms.

Figure 6.1: The allocation or rationing mechanism in the capital markets.



6.2.3. Financial Intermediation

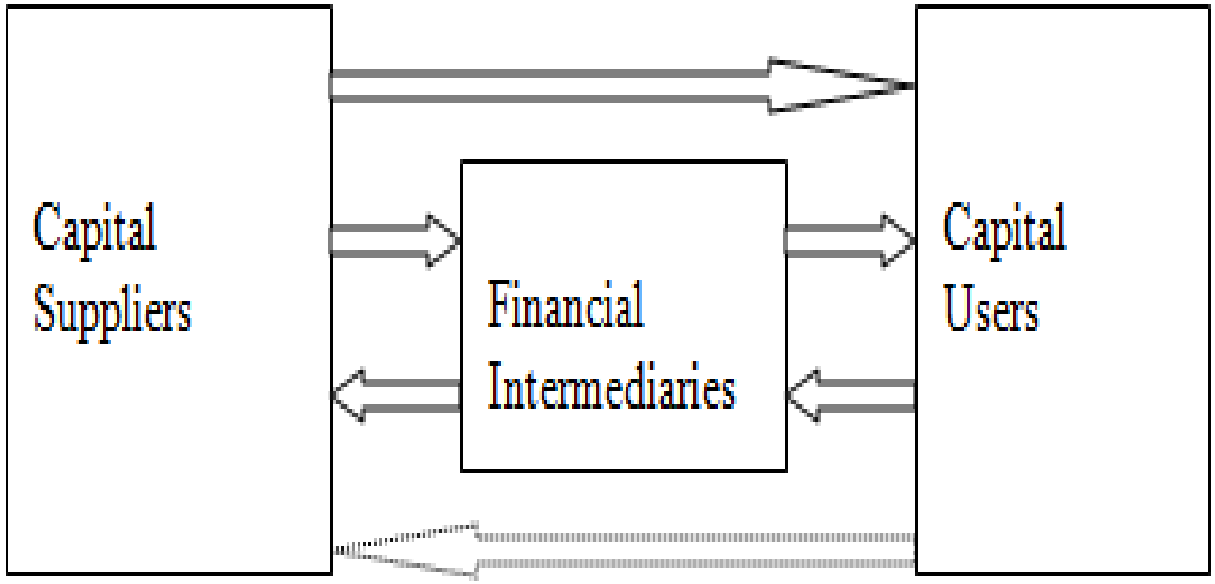
- Financial intermediaries are firms whose assets are comprised primarily of claims on others and whose liabilities consist primary of obligations to others.
- For example, assets of a commercial bank consist primarily of loans and investments in government securities, both of which are claims on others; its liabilities consist primarily of deposits that are obligations to the depositors.
- By way of contrast, assets of nonfinancial business firms consist largely of physical property such as real estate, machinery, and equipment, while their liabilities consist of notes, mortgages, etc.

Major types of financial intermediaries having these roles are:

- ❖commercial banks
- ❖insurance companies,
- ❖economy institutions such as savings, and loan associations and credit unions,
- ❖investment bankers or underwriters,
- ❖government sponsored and owned credit institutions,
- ❖mutual funds, and
- ❖firms that participate in stock and bond exchanges.

- ❖ In addition to the suppliers and users of funds, intermediaries are the principal participants in financial markets.
- ❖ The position of intermediaries in the financial markets is illustrated in Figure 6.2..
- ❖ They provide the linkage between suppliers and users as, for example, a rural commercial bank links depositors and farm borrowers.

Figure 6.2: Flow of capital from suppliers to users with and without intermediaries



Key: Flow of funds

Offsetting flow of securities

6.2.4. Kinds of Financial Markets

Based on complexity financial markets national, local, and international characteristics.

6.2.4.1. The national financial markets

- National financial markets can be located in the capital of a country where all major financial intermediaries in the nation or their representatives are located.
- Instruments traded in the national market generally are of high quality, broadly acceptable to a wide range of investors, and readily marketable.
- The national financial market provides large suppliers and users of capital an effective and efficient means of placing and obtaining funds.

6.2.4.2. Local financial markets

- Local financial markets are comprised of local suppliers and users of capital and the local intermediaries that serve them, such as commercial banks, savings, and loan associations, smaller insurance companies, merchants and dealers, finance companies, and local stock and bond brokers.
- Linkages between local and national markets reduce the potential of vastly different rates in local markets

6.2.4.3. International financial markets

- The national financial markets should be linked to the world financial markets in much the same fashion as local markets within the country are linked to the national market.
- International financial markets balance a complex set of transactions that include exports, imports, loans, savings, and foreign exchange rates.
- The international financial market consists of financial intermediaries whose trading produces the net balance of loans and net currency exchange.

6.3. Problems in Rural Financial Market Development

- The rural finance strategies should focus on how to improve access to three specific financial services: *credit*, *deposits*, and *insurance*
- But there is problem, in order to do so, several problems must be resolved:
  - in perfect information,
  - high levels of price and production risk,
  - high transaction costs,
  - inadequate contract enforcement,
  - the legacy of urban biased economic policies, and
  - weak intermediary institutional capacity.

For rural finance strategies to be effective the following priorities should be identified:

1) legal and regulatory preconditions needed and the institutional actions necessary to
   - strengthen the capacity,
   - improve the performance, and
   - increase the number of deposit taking financial intermediaries (banks and credit unions) present and active in rural areas;
2) agricultural risk management techniques;
3) other financial contracts --supplier credit, leasing and equipment rentals, bonded warehouses, contract farming;
4) deposit services;
5) secured transactions (the creation, perfection)
6) improvements in the transparency and disclosure of information
7) innovations in microcredit technology and products.

6.4. Preconditions for Development of Rural Financial Markets

A fundamental responsibility of governments is in the creation of an enabling policy environment that will allow a complete, competitive, and deep rural financial market to emerge.

To overcome this responsibility, the following favorable conditions should be fulfilled:

- the establishment and maintenance of macroeconomic stability;
- clarification of property rights;
- the establishment of an appropriate legal and regulatory framework; and
- the development of a competitive rural financial intermediary environment

1.Macroeconomic stability

- An improper management of the foreign exchange rate can have adverse effects on the soundness of rural financial intermediaries, especially if inflationary and recessionary effects swamp the demand boost for rural export and import substitute products. Massive devaluations can lead to repayment crises.
- On the other hand, the maintenance of an overvalued currency acts as a tax on agricultural export producers, making them less profitable and less bankable clients.
- The result is that farmers will tend to plant less of the taxed export crop, which is likely to have much better established marketing distribution channels and thus represents an investment of lower default risk for the banker to finance.
- In another scenario, where the commodity is domestic staple, an overvalued currency dampens export demand but stimulates urban import demand for foreign foods that are substitutes, thereby reducing farm income, and increasing bank default risk

2.Appropriate sectoral economic policies

- The rural sector of most developing countries has historically suffered a legacy of urban biased polices, namely, administratively set low food prices and investments in infrastructure, health, and education skewed to urban areas.
- *As a result, profitably investment opportunities in rural areas were restricted, making fewer rural residents commercially bankable*.
- The rapid creation of non-farm jobs hinges on favorable infrastructure and a pool of well educated workers.
- Improvements in on-farm productivity and profitability depend on the quality and density of infrastructure and investments in agricultural crop research and post harvest handling technologies.

4.Land titling and other clearly defined property rights

- The absence of clear and legally recognized ownership or access (note that farmers in Ethiopia have the right to use) contributes to underinvestment and unsustainable exploitation of the natural resource base.
- Financial institutions are reluctant(unwilling) to lend for long gestating projects (e.g. perennial crops, soil and water conservation) without real collateral.
- Thus, the lack of land title, the most valuable asset a farmer usually possesses, makes long term agricultural financing very problematic.
- A clear challenge is to promote the clarification of property rights as means to strengthen and improve the functioning of financial markets.

4.Legal and regulatory framework

- The legislation that governs the entry to banking, capital adequacy, legal lending limits, risk classification standards have a direct bearing on the competitiveness and the solvency of rural finance.
- If the delays and transaction costs are high in executing guarantees, transferring title, presenting a claim in the courts for breach of a contract, etc. are high and unreasonable, this represents a barrier to financial institutions to lend to rural residents and to innovate and develop new financial instruments or products

5.Competitive environment

In order to develop deeper, more efficient and more complete markets, competitive forces have to be unleash(set to free).

In most parts of Ethiopia and other African countries, competition in rural financial services is absent

6.5. Strategies to Improve Rural Financial Services

6.5.1. Credit Services Strategies

It should decrease combination of factors including:

- asymmetric information(reduce the information problem through creation of credit bureaus and the diffusion of group and graduated credit delivery methodologies)
- high transaction costs,
- perceptions of high risk,
- limited investment opportunities,
- lack of competition among suppliers of credit, and
- the legacy of ill conceived and poorly administered state interventions in input, product, and capital markets.

6.5.2. Deposit Services Strategies

Small farmers and non-farm micro entrepreneurs, cannot save because of they are too poor.

The challenges for interested parties are how to design savings product attractive to rural residents, how to lower the cost of deposit mobilization in environments converted to monetarized savings, and how to assure asset quality and maintain sufficient liquidity in order to honor withdrawals and project an image of solvency.

6.5.3. Insurance Services Strategies

- Another important service that has been overlooked is the provision of insurance products.
- Policies that would pay death, accidental, and health benefits and cover damages caused by flood, fire, wind, pests, and drought, would allow rural households to be less vulnerable to welfare reducing contingencies.
- Why insurance markets have not appeared is due to average lower incomes of rural residents, costly information, client dispersion, and the size of the market.

End of a course

Thank you!!!!!!!!