PURPOSE AND OUTCOMES

The purpose of this module is to familiarize you with the models used in the management of credit risk, both at the individual loan and the portfolio level. It provides the full set of skills needed to understand the fundamental lending proposition.

On completion of this module, you should

- understand the principles and process of credit risk management both in a South African and global context
- understand lending objectives and be able to apply the credit risk analysis framework
- be able to monitor and manage credit risk
- understand what a credit risk management framework is
- understand the concept of credit portfolio management
- understand credit rating systems and their impact (role)
- understand how the modern credit risk approach has changed the economics of credit

Chapter 1: Credit basics

Credit risk management is predicated on the existence of risk and uncertainty to leverage the earnings from lending to a borrower. Credit risk arises whenever a lender is exposed to loss from a borrower, counterparty, or an obligor who fails to honor their debt obligation as they have agreed and contracted. For lenders who extend credit in the form of loans, trading activities, or the capital markets, credit risk is inherent in all their business activities and is an element in virtually every product and service that is provided. Typically, the risk of credit-related losses refers to the type of business transaction that is contracted for and can occur from a variety of credit loss scenarios. The most obvious is the failure to repay interest or principal on a direct or contingent loan obligation. Credit loss can also occur from failing to honor or repay reciprocal financial agreements that still have some economic value, such as a credit derivative contract. Finally, credit loss can occur from a decline in a borrower's credit quality that results in a loss to the value of the debt obligation.

There are degrees of differences in the types of risks that credit transactions may hold, all of which need to be specifically understood by the credit organization relative to how they will impact the credit portfolio. Managing the risks that are contained in providing debt services requires a systematic framework to be established throughout the relevant credit areas; this is known as the credit process.

By definition, credit risk is the risk resulting from uncertainty in counterparty's ability or willingness to meet its contractual obligations. Credit risk relates to the possibility that loans will not be paid or that investments will deteriorate in quality or go into default with consequent loss to the bank. Credit risk exists as long as banks lend money. Credit risk is not confined to the risk that borrowers are unable to pay; it also includes the risk of payments being delayed, which can also cause problems for the bank. The default of a small number of large exposures or cluster defaults in an important loan segment (e.g., housing loans, etc.) could generate very large losses and in the extreme case, could lead to a bank becoming insolvent. As a result of these risks, bankers must conduct proper evaluation of default risks associated with the borrowers.

Meaning of Credit

Credit implies monetary or monetary equivalent transactions, to a larger extent credit might involve barter transactions. Define credit as ‘A transaction between two parties in which one (the creditor or lender) sup- plies money, goods, services or securities in return for a promise of future payment by the other (the debtor or borrower). Such transactions normally include the payment of interest to the lender. The definition shows that, credit is not available for free, rather there is a cost that is attached to the use of credit, which is called interest. This interest gives the creditor the incentive to give someone resources, and thus forgo the current enjoyment of those resources, in other words there is opportunity cost associated with the use of credit. This opportunity cost will come as a return to the creditor as interest.

Why does credit Exist

Individuals borrow to meet their immediate requirements of physical needs such as house, furniture, car and durable consumer goods.

Business borrows to make investments to facilitate expansion or to meet working capital requirements.

Governments borrow to keep themselves afloat and to repay the loans from future tax revenues or further loans.

Central governments and big business borrow from abroad. Insufficient knowledge of credit risk or its underestimation will result in distress to both borrowers and lenders, who will suffer legal cases, bad debts, losses, to name just a few. Credit is therefore very important in the proper day to day functioning of the economy. It is the lifeblood of business activities and the economy.

Three instances where the creditor ends up losing even if the debtor settles the dues on time

- **Inflation** - f the rate of inflation exceeds interest rates; the suppliers of credit are badly affected. In such situations, inflation actually redistributes money from lenders to borrowers. If interest rates are 10% and inflation is 20%, the saver will lose 10% of the real value of the savings. However, the banks and other financial intermediaries do not lose much in an inflationary situation because they in turn pass on the reduction in purchasing power to the depositors.

- **Foreign currency devaluation** - In the second instance of devaluation of a foreign currency, in which the debt is denominated, the creditor loses to the extent of the rate of devaluation. For instance, during the 2001 crisis, the devaluation of the Argentinian currency, the peso, had taken its toll in many banks in the US, Spain and leading exporters to that country.

- **Non-compliance with anti-money laundering measures -** Another instance will be non-compliance with anti-money laundering measures implemented by the central banks of most of the countries. Money laundering is a menace of the modern-day world, hence the importance of Know Your Customer (KYC) policies and procedures. In most cases the loss will be through the penalties imposed by the respective authorities if the institution aids or abets money laundering activities knowingly or unknowingly. Similarly, if sanctions are imposed on certain countries, then dealing with or lending to the customers in such countries can also spell trouble and result in losses.

Credit Risk & Sovereign Risk

Whilst the risk that a borrower (whether individual or corporate) may default on obligations is known as Credit Risk, the risk that a foreign government may fail to honor the credit related obligations is defined as Sovereign Risk. It may be noted that the legal remedies in the event of sovereign risk are limited. Hence when extending credit to a business firm located in a foreign country, it is better to ascertain the level of sovereign risk, than to study the credit risk of the business firm.

Role of Credit

Efficient use of idle economic resources

Idle economic resources can be effectively put into use through credit. Borrowers who do not have enough resources to pursue an activity can borrow the resources, which can be returned to the lender after having achieved the objective. There is a practical difficulty for those with surpluses to identify potential borrowers. This is where financial intermediaries come in. Broadly, banks and other financial intermediaries collect economic resources – mainly in the form of deposits – from the public and engage in intelligent lending. Financial intermediaries play an important role in any economy.

Mobilize Financial Resources for Economic Growth

From a macroeconomic perspective, the main function of the financial system in any country is to mobilize resources for economic growth. The financial intermediaries not only intermediate between savers and investors but set economic prices of capital, in line with the monetary policy of the nation.

Use of credit results in economic growth of borrowers

Prudent use of credit results in economic growth of borrowers, which in turn leads to the overall economic well-being of the society and ultimately the country. Credit stimulates both household consumption and business investment.

Credit can be used to encourage industrial development and business investments

Credit can be an important tool used to encourage industrial development and business investments, thereby creating employment opportunities and improving the standard of living of the general population. As purchasing power increases, people will tend to spend more on consumer goods and this will stimulate further economic growth.

Credit market reflects the health of the economy

Usually, the state of the credit markets will reflect the relative health of a larger economy as well. Often the prevailing interest rates and risk appetite for various grades3 of credit risk are some of the indicators of the state of the credit markets.

Credit market

The credit markets dwarf the equity markets. An equity market crisis usually impacts a limited number of financial players; however, a credit crisis often shakes the foundations of the economy. There are various role players in the credit market which include individuals, companies, the government, banks, regulators.

Governments are also active in credit markets. Many governments act through their central bank and buy and sell credit to meet their funding needs. The process with which government engages in the credit market is called open market operations, which is used to the monetary policy objectives of the country through the operations of the central bank.

The granting of credit to commercial customers (business credit) is more complex than personal credit. This is because commercial borrowers are engaged in a much wider range of activities and their needs for credit vary according to the nature and size of their operation.

Advantages and Disadvantages of Credit

The discovery and control of fire has brought several benefits to mankind and it touches the day-to-day life of almost every human being. However, unless fire is used carefully, it can be disastrous. Like fire, if used cautiously, credit is useful to mankind. It brings benefits not only to the lender and user but to the entire economy as well. However, on the other hand, misuse of the credit will bring woes. Successful businesses, individuals and government use credit. Usually, credit growth in the overall economy goes hand in hand with economic growth.

Advantages derived from the use of Credit

There are various advantages that can be obtained from the use of credit which include among others, wealth maximization, tax planning tool, convenience, business control and to a larger extent the socio-economic advantages. These advantages are explained below.

- **Wealth creation and maximization** - a nation can become prosperous only if the resources – including the credit (funds) borrowed – are gainfully deployed to yield a satisfactory economic return. If the borrowing nations use credit without corruption and inefficiency, it will not only result in more economic goods, enhancing the standard of living, but will ease the burden on the population for additional revenue through direct and indirect taxation. If used wisely, credit helps in multiplying wealth much faster and beyond the existing resources of a nation/business enterprise/individual.
- **Tax planning tool** - The cost of borrowings is tax deductible, which preserves a proportionate portion of wealth from tax. When calculating the cost of capital, through the use of weighted average cost of capital, the after-tax cost of debt is used. In essence this reduces the cost of capital, by making debt the cheap source of finance.
- **Convenience** – debt is a convenient method of raising funds, and which can be returned later. the first-generation entrepreneurs who commence a new line of activity may find it difficult to amass enough funds to start and run the business, instead they can get the funding using debt financing.
- **Business control** – the use debt allows shareholder to retain the control of their business, by avoiding dilution of control from new shareholders. When confronted with the choice of type of capital, many entrepreneurs prefer debt capital because they can retain control over the business.
- **Socioeconomic advantages** - As the business borrows more and spends, the local society/economy is benefited as more demand is created. Borrowing and spending or investing by the economic participants in an economy – is self-reinforcing because the increased spending results in more income, rising profits and higher net worth of businesses which in turn results in higher capacity to borrow, which encourages banks and lending institutions to lend more, increasing the spending and investments further in the economy. All this will result in higher employment creation and improved standards of living. Overall, the business spending on credit has far reaching implications for the country's economy, which can drive up the demand for

goods and services, accelerating economic growth. However, credit induced growth needs to be monitored closely by the government and monetary authorities (usually the central bank and finance ministry) as it carries bubble risk.

Disadvantages that arise due the use of credit

Despite the mentioned advantages of use of debt, there are also disadvantages that arise from the use debt, among others include reduced profitability, default and bad reputation, bankruptcies and propensity to overspend. These disadvantages are discussed further below. Using credit is not without disadvantages, misuse of the credit will bring woes.

- **Reduced profitability** - if the ROI exceeds the borrowing costs, leverage is beneficial to borrowers, however, on the flip side, when the ROI is lower than borrowing costs, the business will suffer from lower profitability.
- **Default and bad reputation** - One of the main disadvantages of relying on credit is the inability of the borrower to meet the obligations on time.
- **Bankruptcies** - bankruptcies are caused by the creditors pressurizing the borrower to pay up. Bankruptcies are not good for the creditors either, as they cause credit losses, impacting their profitability. Examples of bankruptcies include Enron.
- **Propensity to overspend** - The main disadvantage for users of credit is the tendency to over-spend beyond their means. Many individuals, nowadays, with easy availability of credit from credit cards or other sources of credit are tempted to 'keep up with Joneses' otherwise known as the 'demonstration effect'. It is not unusual to read in newspapers about people committing suicide because of debt burden. Similarly, during times of easy availability of credit many successful businesses over-leverage themselves to diversify into riskier sectors (e.g., real estate and/or financial investments) or unfamiliar territory, and suffer subsequently during the sector downturn or failure of new ventures.

Suppliers of Credit

There are various suppliers of credit in the economy, which provide credit in different ways. The credit can be made available through loans by commercial banks, non-banking finance companies, private financiers. On the other credit can also be made available through trade credit (is available in the form of goods and services, but to be settled mostly in monetary form). The various suppliers of credit to be discussed below include commercial banks, term lending or development institutions, public debt market, other institutions in credit financing and trade credit.

Commercial banks – Examples of commercial banks in South Africa include ABSA Group – Amalgamated Banks of South Africa, African Merchant Bank (AMB), Allfinanz Boutique, Allied Bank, Capitec Bank, Development Bank of South Africa (DBSA), FNB – First National Bank, FNB BOB Bank, Investec Group, Marriott Merchant Bank, Mercantile Lisbon Bank Holdings, MLS Bank, NBS Bank, Nedbank, Nedcor Group, NRB Group – New Republic Bank, Old Mutual South Africa, Rand Merchant Bank, Saambou Bank, SCMB – Standard Corporate and Merchant Bank, Southern Bank of Africa Limited, Stanbic Africa – Standard Bank Africa Banking Group, Standard Bank of South Africa, Standard Chartered, Trust Bank, United Bank, Volkskas Bank, WesBank (Global Brands: 2021).

A commercial bank is a kind of financial institution that carries all the operations related to deposit and withdrawal of money for the general public, providing loans for investment, and other such activities. These banks are profit-making institutions and do business only to make a profit. The two primary characteristics of a commercial bank are lending and borrowing. The bank receives the deposits and gives money to various projects to earn interest (profit). The rate of interest that a bank offers to the depositors is known as the borrowing rate, while the rate at which a bank lends money is known as the lending rate.

Term Lending/Development Institutions - their main function is to extend term loans, project finance and meet other long-term finance needs of the corporate sector. Most governments have their own State Finance Corporations, to promote industrial development. Realizing its importance many nations in the world have formed development institutions.

President Jacob Zuma has declared 2011 as “the year for job creation” and government is ready to push forward with economic growth through the New Growth Path (NGP). Implementation of the NGP will require greater leveraging of key institutions and agencies of the State, including but not limited to, the various development finance institutions (DFIs) in the country.

As one of the key channels through which government funding reaches communities, these institutions all have a real opportunity to improve the quality of life of people in South Africa.

The table below gives a breakdown of some of the DFIs and their mandates. Public Sector Manager also looked at some perspectives and DFI operations to unpack this sector.

Industrial Development Corporation (IDC)	**Development Bank of Southern Africa (DBSA)**
The IDC is a self-financing, state-owned national DFI that provides financing to entrepreneurs and businesses engaged in competitive industries.	The purpose of the DBSA is to accelerate sustainable socio-economic development by funding physical, social and economic infrastructure. Its goal is to improve the quality of

	life of the people of the region. The bank plays a multiple role of financier, adviser, partner, implementer and integrator to mobilise finance and expertise for development projects.
National Housing Finance Corporation (NHFC) The NHFC was set up with a mandate to ensure that every South African with a regular source of income is able to gain access to finance, to acquire and improve a home of his or her own.	**Khula Enterprise Finance** Khula is dedicated to the development and sustainability of small businesses in South Africa. It provides finance, mentorship services and small business premises to small and medium enterprises (SMEs) through a network of partnerships and to encourage the sustainable development of SMEs while ensuring that Khula remains financially viable.
National Empowerment Fund (NEF) The NEF promotes and facilitates Black Economic Empowerment (BEE) and transformation. Its mandate and mission are to be a catalyst of Broad-Based BEE through asset management, fund management and strategic projects.	**Independent Development Trust (IDT)** The IDT has a mandate to support government in meeting its social mandate of alleviating poverty in improving the quality of life of poor rural communities. It has created a reputation for being a development programme-implementing agency focusing on development planning, implementation, and the coordination of government programmes.
Land and Agricultural Development Bank of South Africa The Land Bank is a specialist agricultural bank guided by a mandate to provide financial services to the commercial farming sector and to agribusiness and to make available new, appropriately designed financial products that would facilitate access to finance by new entrants to agriculture from historically disadvantaged backgrounds.	**National Youth Development Agency (NYDA)** The NYDA's mandate is to: advance youth development through guidance and support to initiatives across sectors of society and spheres of government embark on initiatives that seek to advance the economic development of young people develop and coordinate the implementation of the Integrated Youth Development Plan and Strategy for the country.
National Urban Reconstruction and Housing Agency (Nurcha)	**Rural Housing Loan Fund (RHLF)**

Nurcha supports the national programme to house all South Africans in sustainable human settlements. Nurcha provides bridging finance to contractors and developers involved in the construction of subsidy and affordable housing, community facilities and infrastructure.	The RHLF's core business is providing loans, through intermediaries, to low-income households for incremental housing purposes. Incremental housing is a people-driven process; and the RHLF's core business is to empower low-income families in rural areas to access credit that enables them to unleash the potential of their self-help, savings and local ingenuity to build and improve their shelter over time.
South African Microfinance Apex Fund (Samaf) Samaf is tasked to facilitate the provision of affordable access to finance by micro, small and survivalist business for the purpose of growing their own income and asset base. The primary purpose of Samaf is to reduce poverty and unemployment and also to extend financial services to reach deeper and broader into the rural and peri-urban areas.	**Micro Agriculture Finance Scheme of South Africa (Mafisa)** Mafisa was developed as a micro and retail agricultural financial scheme for economically active poor people. Mafisa allows access to financial services through selected institutions on an affordable and sustainable basis. It assists with loans to target groups, individuals, farmers and other groups as well as savings and banking facilities at approved financial institutions.

Public Debt Market – large established listed public companies with enough credibility and financial standing bypass the banking sector and seek funding directly from the capital markets. This is by way of bonds, debentures of commercial papers; which require mandatory rating by credit rating agencies. The JSE regulates the largest listed Debt Market in Africa, both by market capitalization and by liquidity. It has done so since 2009, when it acquired the Bond Exchange of South Africa.

At the end of 2013, the JSE had roughly 1 600 listed debt instruments, totaling more than R1.8 trillion nominal outstanding. More than half of the debt listed on the JSE is placed by the South African government. Other issuers include South African state-owned companies, corporates, banks and other African countries.

The South African debt market is liquid and well developed in terms of the number of participants and their daily activity. Roughly R25 billion is traded daily.

You can access the following through the JSE's Debt Market:

Government Bonds: More than R1 trillion is currently listed and these instruments account for 90% of all liquidity reported to the JSE. In 1998, the National Treasury appointed 12 primary dealers to make a market in their listed debt. At the end of 2013, there were eight primary dealers permitted to bid at weekly debt auctions. Primary dealers are required to make a secondary market in qualifying RSA paper.

Corporate Bonds: Since the first Corporate Bond was issued in 1992, more than 1 500 corporate Debt Instruments have been listed on the JSE Debt Market. Liquidity remains relatively low compared with government debt, but issuance keeps growing.

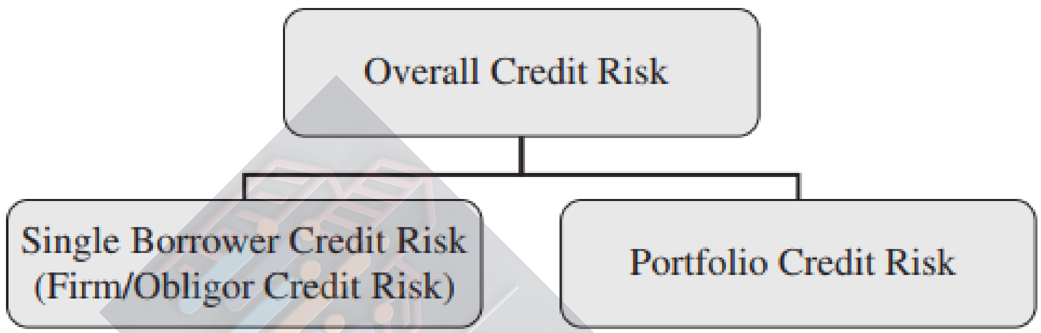
Repo Market: The JSE Repo Market is an active and liquid funding market, with daily funding exceeding R25 billion. It has seen daily spikes in excess of R200 billion, which bears testimony to the liquidity and efficiency of the market.

Other Institutions in Credit Financing - Non-Banking Financial Institutions also play a very active role in lease and hire purchase. Insurance companies have a large pool of resources at their disposal, which are also deployed in a variety of lending/investment activities. Housing finance companies, hedge funds, non- banking subsidiaries of major MNCs (e.g., the financing arm of automobile majors such as BMW), etc. are some of the significant players in this segment.

Trade credit - Another source of credit is the supplier/trader/manufacturer who offers credit for short periods, ranging from 30/120 days.

Essentials of credit risk analysis

Credit risk exists whenever a product/service is obtained without paying for it. Credit risk refers to the probability of the loss (due to the non-recovery of) emanating from the credit extended as a result of the non-fulfilment of contractual obligations arising from unwillingness or inability of the counterparty or for any other reason.' If the probability of the loss is high, the credit risk involved is also high and vice versa. The study of credit risk can be split into two, which facilitates better understanding of the term, as shown by the diagram below:



Single borrower/obligor exposure and Portfolio Credit Risk

A single borrower/obligor exposure is generally known as Firm Credit Risk or Obligor Credit Risk while the credit exposure to a group of borrowers, is called Portfolio Credit Risk. while obligor risk decides the fate of the overall portfolio, portfolio risk has different dynamics and plays a crucial role in determining the quantum of economic capital required, which is a function of expected credit loss.

Settlement risk

Settlement risk arises when the conduit through which the payment is channeled fails to pay. For instance, sometimes the moneys sent from the Middle East to the US have been confiscated due to suspicion related to terrorism links; (ii) or sometimes, UN sanctions prevent dealing with certain countries and this may also result in failure of payments, even if the counterparty is creditworthy; (iii) or, the collapse of banks (e.g., Herstatt Bank in 19741 or Lehman Brothers in 2008) who had received payments from a number of counterparties but went bankrupt before payments were made to the other parties in the transaction. Usually, settlement risk is non-existent in domestic transactions because of the centralized clearance controlled by the Central Bank, although isolated settlement risks leading to credit loss cannot be fully ruled out.

Sovereign risk

Another credit risk emanating from cross-border credit is sovereign risk, which occurs if the government imposes foreign exchange controls. Malaysia did so soon after 1997/98 Far East Economic Crisis while Pakistan did so after the US sanctions subsequent to their nuclear test in 1998. Whilst the obligor is willing to settle the credit, the government may not allow it.

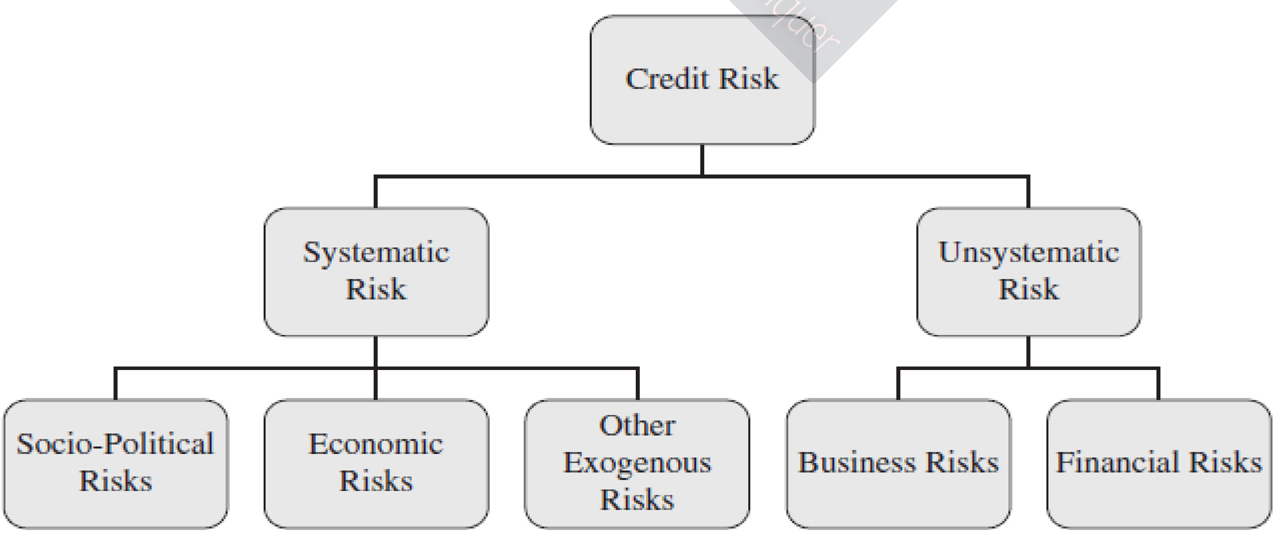
Foreign currency risk

Foreign currency risk is the loss of credit value resulting from adverse foreign exchange fluctuations. Accordingly, creditors with significant exposures to foreign markets will be interested in looking at how these three risks impact the firm risk and portfolio risk.

Evaluating credit risk is a matter of information processing, which is becoming complex in line with the advancement mankind is witnessing in various areas, technological or otherwise. Certain types of and factors triggering credit risks are controllable while others are not. Understanding and differentiating between the two is highly critical for sound credit risk analysis and management.

Causes of Credit Risk

According to Chen, Fabozzi, Pan and Sverdlove (2006) the major sources of credit risk are default probability and recovery. Together with interest rate risk, they determine the price of credit derivatives. There are several factors to be considered when one looks at credit risk, among others are domestic factors (like change in the government policy or industry), or company specific problems (like poor management, poor products). The diagram below illustrates some of the problems or causes of credit risk. Each of the components will be discussed in detail below.



Both obligor credit risk and portfolio credit risk are impacted by or triggered by systematic and unsystematic risks. Rigorous study of credit risk through meticulous dissections is the hallmark of good credit risk analysis. Not only financial intermediaries and large multinationals, but also all classes of medium-large businesses will benefit from thorough credit risk analysis as it will minimize bad debts and associated costs, such as collection charges, administration time and costs spend on follow-up, litigation costs, etc.

Market risk (systematic risk)

Risk that affects all players in the market place is called ‘market risk’ or ‘systematic risk’. Changes in economic fundamentals (interest rates, exchange rates, inflation, consumer demand, the price of key commodities such as oil, etc.). Market risk is measured by the beta co-efficient. The market (JSE) has a beta of 1, the market’s riskiness relative to itself. Shares/portfolios with a beta greater than 1 (say 1,2) face a bigger risk than the market. Shares/portfolios with a b ta l ss than 1 (say 0,8) face a smaller risk than the market.

According to the prescribed text External forces that affect all businesses and households in the country or economic system are called systematic risks, and are considered as uncontrollable risks. For instance, if the economy is witnessing a sharp economic crisis/recession, bankruptcies will increase, triggering credit losses, while stock markets will decline due to lower corporate profits, while unemployment rises, amongst other effects. Thus, systematic risks impact all in the playground (viz. economy). Similarly political risks such as a military coup, new elected government discontinuing certain policies and programmes, wars, terrorism, international isolation and hosts of other political risks can severely impact the quality of a credit asset and may lead to losses.

Firm-specific risk (unsystematic risk)

Risk associated with the basic functions of the organisation (information technology, production processes, product-markets, innovation, financing, leadership, human skills, etc.). This is operational/business risk. It is often assumed that management can eliminate this risk by diversification or simply managing better. According to Joseph (2013) The second type of credit risk is known as unsystematic risk/controllable risk. These risks do not affect the entire economy or all business enterprises/households. Such risks are largely industry specific and/or firm specific. A firm can diversify these risks by extending credit to a range of customers. We will see more in Chapters 5–7. At present suffice to say that the credit risk triggered by both systematic and unsystematic factors are to be carefully handled, and a business entity ought to attempt to transfer, shift and avoid.

Credit risk and return

The primary objective of a business firm taking credit risk is to earn a return. Whilst the financial intermediary earns commission or interest income, non-financial firms benefit in the form of enhanced sales, resulting in more profits. Economic agents involved with credit risk will attempt to (a) maximize return for a given level of credit risk and/or (b) minimize credit risk for a given level of return.

For financial intermediaries directly involved in lending or investing in bonds and debentures, the relationship between credit risk and returns is explicit, while in non-financial firms, the relationship is implicit and embedded in the profit element. However, one fundamental is common to both: given the probability of default, is the return offered by the prospective credit decision attractive?

Credit Risk Analysis

Credit risk analysis (CRA) is the study from the perspective of a supplier of credit of a present claim on another economic agent in the form of debt, including trade payables, loans, and public securities, among others. Situations a risk manager might need to conduct a credit risk analysis.

- **Banks/Financial Institutions**: What are the risks involved in extending a loan to a particular firm? Given the risk level, how should it be priced? What about its repayment capability? Is the management capable? Which economic and industrial factors will impact the performance of the firm?
- **Mutual Funds/Insurance Companies**: Shall we invest in the debentures/bonds of XYZ Ltd? What about the financial position and major solvency ratios? Are the indenture provisions adequate? What are the major factors that may trigger distress and default on debt? Given the risk level, is the return acceptable?
- **Manufacturer/Trader**: Should we extend credit to this customer? If so, what is the credit period to be offered? What are the financial position and bank facilities enjoyed by the customer? Is collection risk manageable?
- **Hedge Funds**: Shall we buy the distressed debt of XYZ Ltd (e.g., Enron or Lehman Brothers)? Will the final recovery for the claims (under distressed debt) be higher than current prices? What is the downside to buying the distress debt/claims at current prices? Are the returns attractive?

Need for credit risk analysis

Credit risk plays an important role in ensuring the financial health of both financial and non-financial businesses; impacting directly on possible bad debts or credit losses. The main purpose of credit risk analysis is to quantify the level of credit risk that the borrower presents to the lender. It involves assigning measurable numbers to the estimated probability of default of the borrower. Credit risk analysis is a form of analysis performed by a credit analyst on potential borrowers to determine their ability to meet debt obligations. The main goal of credit analysis is to determine the creditworthiness of potential borrowers and their ability to honor their debt obligations.

If the borrower presents an acceptable level of default risk, the analyst can recommend the approval of the credit application at the agreed terms. The outcome of the credit risk analysis determines the risk rating that the borrower will be assigned and their ability to access credit. The following bears testimony as to why so much importance has been attached to credit risk analysis: -

- **Prudence** – It is the responsibility of the supplier of credit to ensure that their actions are prudent because excessive credit will prove disadvantageous to almost everyone in the economy. Creditors should conduct a proper risk analysis of the credit: ascertain, measure and manage the credit risk in such a manner that it does not spin out of control.
- **Increase in Bankruptcies** - Given the incidence of bankruptcies, the role of accurate credit analysis hardly needs to be emphasized.
- **Increase in Competition -** With increase in competition, naturally pricing is under pressure. When margins get thinner, even the previously accepted level of bad debts would become unacceptable. In other words, as your returns get lower, technically your risk level should also reduce. So, increase in competition is yet another reason for tighter credit risk analysis.
- **Poor Asset Quality** - NPA management is a major challenge for banks and non-financial businesses, where credit is extended to their customers. One of the major constraints of the competitive efficiency of banks is the propensity to accumulate poor quality assets. Whilst competing for business, effective credit risk management should check the propensity to accumulate poor quality of assets.
- **High Impact of the Credit Losses** – Minimizing credit loss is the best option rather than attempting to book 50 times business volumes, to ensure adequate returns to the shareholders. It is a common perception that a small percentage of bad debt is acceptable and won't do much damage. However, unfortunately it is not the case. Even a small credit facility will hurt the business if it turns bad, especially for banks and other financial intermediaries operating in a highly competitive sector.
- **Proliferation of Limited Liability Enterprises** – Unlike in proprietorships and general partnerships, liability of the owners/shareholders of Limited Liability Companies is limited to their original contribution of capital. Audited financial statements are now used and analyzed by several external parties, including creditors.

- **Risk vs. Return Matching** – As the credit risk increases, so should the returns in order to compensate
- **Disintermediation** – With the expansion of secondary capital and debt markets, many creditworthy customers, especially the larger ones, access and raise funds directly from the public
- **Off-Balance sheet Transactions** – Companies use off-balance sheet transactions such as operating leases, factoring with recourse, discounting of bills and other derivatives to control forex exposures and interest rate fluctuations. In-depth credit analysis is a must to unearth the real credit standing of a firm using derivatives extensively.

Challenges of Credit Risk Analysis

According to the prescribed textbook, many businesses, especially banks and financial institutions, have collapsed due to poor selection of credit risk in their attempt to grow portfolios and maintain or improve earnings. Almost all bank failures have a common characteristic: the top management – CEOs and Boards of Directors – failed in their responsibility to understand the challenges of credit risk and manage it well. Credit risk analysis is an art (individual skill through application of principles will differ from analyst to analyst) and a science (analysis is based upon established principles and sound logic).

The Art and Science of Credit Risk Analysis

Credit risk analysis is an art and a science. It is a science as the analysis is based upon established principles and sound logic. However, like law, medicine and equity analysis, credit risk analysis is not an exact science. Individual skill is the art element, and the application of the principles will differ from analyst to analyst. Analysis involves research to gather important facts and data and presenting them in a coherent, logical and intelligible manner so that a specific judgement or opinion can be expressed.

The global credit crisis during 2008 triggered a lot of questions on the quality of credit risk analysis done by several banks and financial intermediaries because the credit losses suffered either pushed them into oblivion or near bankruptcy. It can be argued that this is the result of abandonment of a sound analytical approach or delusion created by the protection offered by credit derivatives. Nonetheless, it should be accepted that there are obstacles in credit risk analysis.

of credit risk analysis

There are various factors that hinder good and quality credit analysis in the financial institutions and non-financial institutions. Assessing the credit risk of small and medium size enterprises (SMEs) is one of the most challenging tasks in banking. The difficulties stem from fragmented financial data, the strength of risk models, length of the process, and broader issues such as the tension between sales and credit. The competitive lending environment, regulatory requirements, different geographies, and positions in the economic and credit cycles also have an impact (Helene). There are seven key challenges related to assessing credit risk, including challenges stemming from the wider business infrastructure. While alternative lenders seek to differentiate themselves from traditional lenders through business models which have a strong technology focus, both sets of lenders share some basic challenges when it comes to credit risk assessment:

- Financial information – level of detail, reliability, timeliness
- Difficulty predicting future cash flow
- Accuracy or relevancy of rating models
- Process efficiency and system infrastructure
- Data, reporting, and audit requirements
- Problem loan management
- Business model sustainability

Financial information.

A common complaint, especially of credit executives, is that SME financial information does not provide sufficient detail to understand the drivers of the business. Examples include:

- How sales break down by product, geography, or line of business
- Performance compared with budget
- The absence of any cash flow statement.

Borrowers often argue that the information they produce is sufficient for them to run their business successfully, and that they do not have sufficient resources to produce bespoke financial information. However, the banks providing funding are not versed in the business and need more explicit information.

If a good relationship exists and the request is reasonable, borrowers are usually open to amending the information they provide. Moreover, technological advances can address some of these challenges, as many providers offer the ability to link a borrower's financial accounting software directly with the bank's records. This automated delivery of financial data from borrower to lender can help resolve the resource, detail, and timeliness issues.

Predicting cash flow

Before cash flow can be predicted, it must be derived from either historical or forecast income and balance sheet statements. After data has been extracted, it is not an unduly difficult task using a financial analysis package. However, understanding the expected trend of the borrower's business, and ensuring that the characteristics of any new capital structure are included in forecast cash flow modeling, can only be undertaken with appropriate information from the borrower.

Rating models

Models are only as good as the quality and richness of the data that drives them. It is, therefore, important to have a proven and valid benchmark – reliable market information from historical SME company default data. Thus, a database of historical financial statements and default rates on a global scale and of substantial size is required. For example, Moody's Analytics RiskCalc is the largest database of private company financial information and default rates in the world. It feeds into models based on ratios which have been proven to be highly predictive of default, and which therefore provide an effective early warning against credit deterioration.

Process efficiency and infrastructure

The key issue here is the time it takes for a lender to process a loan application and disburse funds, commonly known as "time to cash." Many factors can impede the time to cash:

- Market environment (after the global financial crisis banks' approval processes slowed markedly)
- Quality of decision makers
- System infrastructure

Where the process is too manual and there are too many systems and where data is duplicated, this inefficiency can cause slower response times. While installed systems and hardened data siloes can make streamlining lending processes challenging, new outsourced or cloud platforms offer an attractive alternative since they require no new hardware, no additional IT staff, and are automatically updated and backed up. These advanced SaaS systems, such as Moody's Analytics Lending Cloud, provide a single, integrated solution for managing the entire credit lifecycle.

Data, reporting, and audit

The ability to extract meaningful data to understand key performance indicators and for audit requirements depend on several things. First, a focus on exactly what data is the most meaningful is required. Next, a data structure or system that captures the right data in a user-friendly way is essential.

And finally, strict discipline and well-defined processes are necessary to ensure that the data is accurately captured and maintained.

Problem loan management

Lenders who have effective processes for the early detection of distressed loans are most likely to minimize losses. Bankers should:

- Build good relationships with borrowers
- Have early warning triggers such as covenants in place
- Have a specialist team – initially on a monitoring basis, but if necessary, scaling up to partial or full management of distressed credits.

Business model sustainability

Alignment between the market strategy of the business and sectors that have sufficiently strong creditworthiness is important to mitigate against losses when a particular sector starts to underperform. In addition to alignment with strong sectors, fundamentals such as making sure that the overall business strategy is viable in an increasingly competitive marketplace go without saying. But there are two more factors that come into play:

- Weak financial performance can lead to pressure to take greater risks and go beyond established risk parameters
- Many lenders do not fully understand the profitability of the deals they are underwriting

A strong risk culture, with low tolerance for behavior outside acceptable risk parameters, is essential to address the first point. To address the second point, robust models that feed into appropriate deal-pricing tools are necessary.

Keys to Success

SME risk assessment is a multi-faceted process with many challenges. Key to success in addressing these challenges are processes that enhance the analysis of quantitative and qualitative data, the quality of decision making, and the relationships between borrowers and lenders. To learn more about our perspectives in this area, feel free to contact us.

Let us use the information from the textbook: challenges in credit risk analysis
Reliability of the Data: In order to conduct a credit risk study, analysts require a substantial amount of data and information related to the general economy, industry and the borrower. Audited financial statements are one of

the major sources of data. There have been instances where deliberate falsification of audited financial statements was made, leading to collapse of institutions like Enron (US), Lehman Brothers (US) and Satyam Computers (India). Usually, audited accounts are relied on heavily by banks, financial and credit institutions. They take comfort from the fact that the books of accounts are audited by financial experts. However, the collapse of several high-profile institutions – just months after a clean report issued by their auditors – casts a long shadow over audited accounts as well. False financial statements – read the case of Steinhoff from RSK4802.
Profitability/Business Considerations: Banks and financial institutions are also commercial establishments and often profits are a key driving factor. The management team is also usually incentivized to aim at higher profits that will result in bonuses for key executives (decision takers) and dividends for the shareholders (owners). Sometimes, the over-riding focus on profitability blinds the decisions on risk taking with disastrous consequences.
Unpredictable future: Normally, the conclusion drawn based on the past may become worthless if there are new developments in the economy, sector or within the borrower itself. Scenario analysis might be the best way for an analyst to go, looking at the Best case, Realistic case and Worst case.
Reliability of risk models: Whilst they play a fundamental role in the risk management of banks and financial institutions, practitioners, regulators, academics and model designers must be aware of limitations and set realistic expectations of what models can do. Many assumptions are used in design and implementation of the models used in risk modelling. More emphasise is provided to the models rather than the use of human knowledge.

Challenges to Successful Credit Risk Management https://www.sas.com/en_za/insights/risk-management/credit-risk-management.html
Inefficient data management An inability to access the right data when it is needed causes problematic delays
No groupwide risk modeling framework Without it, banks cannot generate complex, meaningful risk measures and get a big picture of groupwide risk.
Constant rework

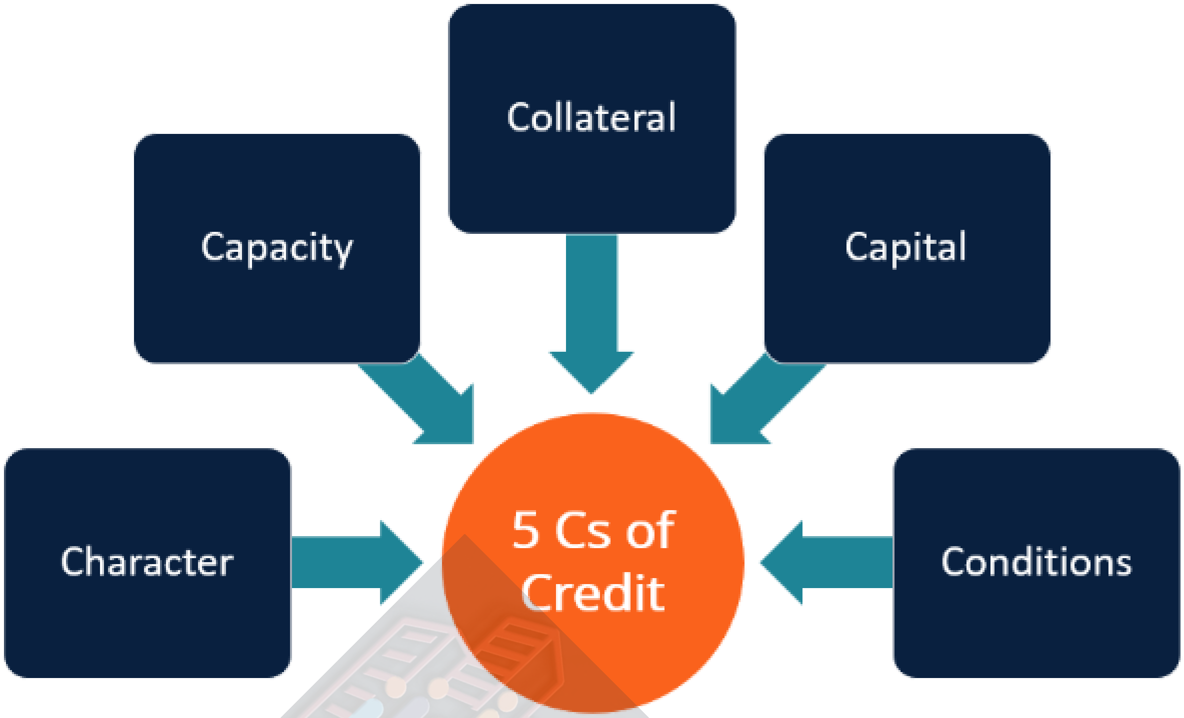
Analysts cannot change model parameters easily, which results in too much duplication of effort and negatively affects a bank's efficiency ratio.
Insufficient risk tools Without a robust risk solution, banks cannot identify portfolio concentrations or re-grade portfolios often enough to effectively manage risk
Cumbersome reporting Manual, spreadsheet-based reporting processes overburden analysts and IT.

Elements of credit risk analysis

The 5Cs of credit are considered when a new credit is to be extended. The 5Cs model is the traditional credit analysis model.

Character The integrity and honesty of the borrower to settle their dues on time. The borrower might have the capacity to pay but not the willingness.
Capital The higher the capital contribution by the owners in the business, the better. Failure of the business might be an option if a lot is at stake. This should therefore be comfort for the lender.
Capacity The borrower's capacity to meet their debt service obligations must be studied, focusing on financial statements.
Conditions The lender must ensure that the loan agreement clauses are legally enforceable.
Collateral High quality creditworthy customers (AAA rated corporate) need not extend collateral in most cases. Assets (collateral) offered by a borrower to secure the credit are just an additional comfort

The "5 Cs of Credit" is a common phrase used to describe the five major factors used to determine a potential borrower's creditworthiness. Financial institutions use credit ratings to quantify and decide whether an applicant is eligible for credit and to determine the interest rates and credit limits for existing borrowers. A credit report provides a comprehensive account of the borrower's total debt, current balances, credit limits, and history of defaults and bankruptcies, if any (https://corporatefinanceinstitute.com/).



https://corporatefinanceinstitute.com/resources/knowledge/credit/5-cs-of-credit/
5 Cs of Credit – Character Character is the most comprehensive aspect of the evaluation of creditworthiness. The premise is that an individual's track record of managing credit and making payments indicates their "character" as relevant to the lender, i.e., their propensity for repaying a loan on time. Past defaults imply negligence or irresponsibility, which are undesirable character traits. Owing to the degree of specialization required in compiling a detailed list of an individual's credit history, financial intermediaries such as credit rating agencies or banks provide rating services. There may be a certain degree of variance in reports compiled by different organizations. They include the names of past lenders, type of credit extended, payment timeline, outstanding liabilities, and so on.
5 Cs of Credit – Capacity A borrower's capacity to repay the loan is a necessary factor for determining the risk exposure for the lender. One's income amount, history of employment, and current job stability indicate the ability to repay outstanding debt. For example, small business owners with unsteady cash flows may be considered "low capacity" borrowers. Other responsibilities, such as college-bound children or terminally ill family members, are also factored in to evaluate one's future payment obligations.

An entity’s Debt-to-Income (DTI) Ratio, the ratio of its current debt to current income (before taxation), may be evaluated. Collateral is not considered a fair metric for quantifying one’s capacity because it is only liquidated when the borrower fails to repay the principal amount of a loan, i.e., in the worst-case scenario of a credit transaction. Moreover, no collateral is declared in cases of unsecured loans such as credit cards.

5 Cs of Credit – Collateral

When being assessed for a secured product such as a car loan or a home loan, borrowers are required to pledge certain assets under their name as collateral. They may include fixed assets such as the title of a parcel of land or financial assets and securities such as bonds.

The value of the collateral is evaluated by deducting the value of current loans secured through the same asset. The remaining equity indicates the true value of collateral for the borrower. The evaluation of the liquidity of collateral is also dependent on the type of asset, its location, and potential marketability.

5 Cs of Credit – Capital

Capital represents the overall pool of assets under the name of the borrower. It represents one’s investments, savings, and assets such as land, jewelry, etc. Loans are primarily repaid using overall household income; capital is additional security in case of unforeseen circumstances or setbacks such as unemployment.

5 Cs of Credit – Conditions

Conditions refer to the specifics of any credit transaction, such as the principal amount or interest rate. Lenders assess risk based on how the borrower plans to use the money, should they receive it.

Other external features, such as state of the economy, prevailing federal interest rates, industry-specific legislation, and political change are also considered. The features are not individualistic as they cannot be influenced by the borrower. Nevertheless, they indicate the level of risk associated with a certain investment. For example, during a recession, even borrowers with a 700+ FICO score may not be able to access credit.

Chapter 3: Credit risk management

General consensus across the globe suggests that, there is no-way credit risk can be eliminated in the world for as long credit form an element of the economic system. The prescribed text suggests that, Elimination of credit risk is impossible as long as credit forms an integral part of the economy. The organization should manage credit risk in such a manner that it does not spiral out of control. Sound credit risk management presupposes the presence of a good system of credit analysis that will prop up the credit risks to be dealt with. An organization that manages credit risk well will succeed and attain its business objectives. This applicable to both financial and financial firms.

Strategic position of credit risk management

As per prescribed text, the importance of the role of credit risk management within the broad framework of an organization is a function of the credit exposure a business takes in its day-to-day operations. Financial intermediaries who are active in the credit market provide utmost importance to this function. However, even financial intermediaries who put credit risk management in the top slot are also exposed to other risks such as liquidity risks, market risk and so on. In nonfinancial businesses, there are other risks, which take priority over credit risks. For instance, in a pharmaceutical company, quality risk may be the most important although credit risk is a matter of concern so far as the company sells on credit. Whilst the risks of an organization vary depending upon the core operations, generally the following types of risks are common to most businesses:

Figure 1: A Hierarchy of Risks Confronting Financial Intermediaries

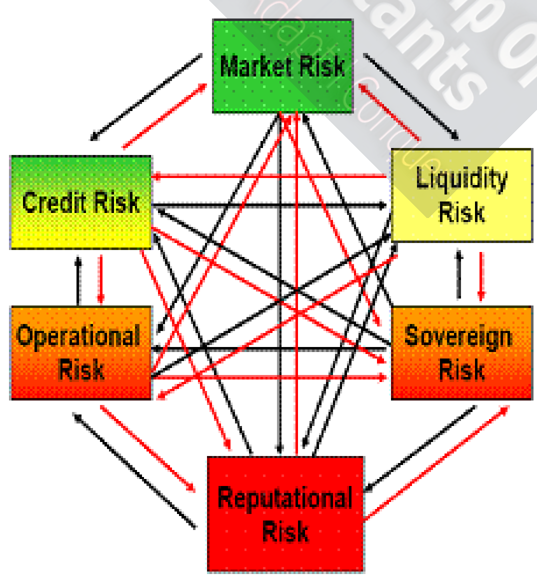


Figure 1: EureK Hedge

- **Operational risks** - arising from day-to-day operations. Whilst a credit of a cheque to the wrong account poses an operational risk at a bank, the pilferage of stock is an operating risk for a retailer.
- **Market risks** - crop up from the business environment in which the firm operates. The new product launched by a competitor or the emergence of a new competitor are some of the common instances of market risks.
- **Legal risk** - is the result of the various legally binding agreements entered into by the firm or because of contravention of the laws of the land.
- **Computer/system risks** - arise from the information technology used and associated systems and procedures. Whilst system crashes due to several reasons can wipe out a vital database, misuse of the system through unauthorized personnel is yet another risk.
- **Reputation risks** - emerge from factors that would lower the goodwill and reputation of the business in the eyes of the public, which impacts business prospects. According to Walter (2007) reputational risk in banking and financial services is associated with the possibility of loss in the going-concern value of the financial intermediary – the risk-adjusted value of expected future earnings. Professor Walter gives a possible working definition as follows:

  "Reputational risk comprises the risk of loss in the value of a firm's business franchise that extends beyond event-related accounting losses and is reflected in a decline in its share performance metrics. Reputation-related losses reflect reduced expected revenues and/or higher financing and contracting costs. Reputational risk in turn is related to the strategic positioning and execution of the firm, conflicts of interest exploitation, individual professional conduct, compliance and incentive systems, leadership and the prevailing corporate culture. Reputational risk is usually the consequence of management processes rather than discrete events, and therefore requires risk control approaches that differ materially from operational risk."
- **Liquidity risks** - and improper balance sheet structure are among several financial risks faced by a business's entity. According to Risk Insights (2020) Liquidity is a bank's ability to meet its cash and collateral obligations without sustaining unacceptable losses. Liquidity risk refers to how a bank's inability to meet its obligations (whether real or perceived) threatens its financial position or existence. Institutions manage their liquidity risk through effective asset liability management (ALM).
  - **Liquidity risk management** - and ALM encompass the processes and strategies a bank uses to:

- Ensure a balance sheet earns a desired net interest margin, without exposing the institution to undue risks from the interest rate volatility.
- Plan and structure a balance sheet with a proper mix of assets and liabilities, to optimize the risk/return profile of the institution going forward.
- Assess its ability to meet its cash flow and collateral needs (under both normal and stressed conditions) without having a negative impact on day-to-day operations or its overall financial position.
- Mitigate that risk by developing strategies and taking appropriate actions designed to ensure that necessary funds and collateral are available when needed.

In short, credit risk is one of the risks faced by business entities. The importance and relevance of credit should be defined in the overall context of all the risks faced by the business entity. If the credit risk is minimal, as in the case of cash-based businesses, then the credit risk function will be given least importance. On the other hand, in the case of banks with a significant credit portfolio, credit risk management is of paramount importance. All financial intermediaries other than banks also attach prominent significance to credit risk. After all, financial intermediaries are among the main pillars of any economic system and indirectly credit risk is critical from the point of view of the economy as well. For most non-financial businesses, credit risk can be considered critical and is usually regarded as one of the major risks to be monitored.

Credit risk management context

It is important to acknowledge that, credit risk management cannot be separated from the overall organisational content, and to a larger extent, credit risk arise from the goals and strategic objectives of the firm (encompassed in the vision and mission of the entity). An important thing to note is that credit risk appetite tends to depend on the human, financial and operational resources an organisation has. SWOT analysis can be used in credit risk management.

Credit Risk Management Objectives

Both financial and non-financial firms face credit risk in the same way, however the objective of these organisations differs in nature. A financial intermediary takes credit risk to earn financial income in the form of interest income or otherwise. A non-financial entity takes it to enhance its revenue base. The main objectives of credit risk management include the following:

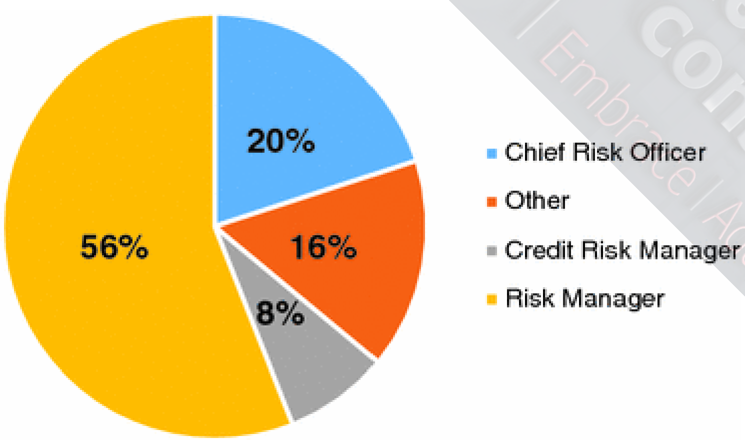
- Maximizing benefits from potential credit opportunities.
- Pricing credit risk adequately.
- Minimizing bad loans.
- Adherence to credit policies.
- Maintenance of a reliable database.

Credit Risk Management Structure

In order to ensure attainment of the above credit objectives, various strategies and steps have to be implemented: -

- A lenient attitude towards risk in order to garner higher market share may require the strategy of decentralization of approval powers
- A talented pool of credit experts and specialists at both macro and micro levels is essential and forms one of the core essentials for effective credit risk management
- Chief credit officer being in charge of overall credit risk management to ensure the attainment of the related goals

Credit Risk Culture



According to Moody's Analytics for decades, management leaders have extolled the importance of a strong and positive "corporate culture." A positive credit risk culture in a financial institution might be described as: "An environment of shared values and beliefs about an organization's approach to credit risk in which people behave according to accepted standards and principles when evaluating and discussing lending decisions." Leaders who seek to establish a strong credit risk culture have two challenges: first, creating the desired culture, and second, sustaining it. The most successful credit risk organizations combine four key elements: (1) leadership; (2) organizational structure; (3) policies, procedures and processes; and (4) people. It is noteworthy that the most enlightened leaders seem to understand that, although structure, policies and protocols are important, the performance of people is what ultimately drives and sustains a strong credit risk culture Moody's Analytics.

According to Harvard Business School professor James L. Heskett, culture "can account for 20-30% of the differential in corporate performance when compared with 'culturally unremarkable' competitors."

The examples discussed in this paper provide insights into the various approaches to creating and sustaining a strong and remarkable institutional credit culture. Throughout these examples some common hallmarks of effective credit risk management become apparent (Moody's Analytics)..

According to Moody's Analytics four factors combine to produce top-performing credit cultures: (1) leadership; (2) organizational structure; (3) policies, procedures and processes; and (4) people. The unquestioned commitment of senior management is one critical characteristic of strong credit cultures. Exemplary organizations align their structure and policies with core values and beliefs about how risk is evaluated, discussed and managed. In all examples, the strongest driver is people applying strong credit skills to achieve sound credit judgments (Moody's Analytics).

According to the prescribed textbook, Credit culture is a set of values and beliefs shared by people in credit risk management. It encompasses the tangible written policies and procedures, and the intangibles – such as traditions, philosophies and informal standards. Credit culture is developed over time, defines the circle of competence and is passed on. The creation of the right risk aware culture goes a long way to ensuring effective credit risk management. Weak credit culture will lead to assumption of credit risks not in line with credit risk management objectives and strategies. Periodical training of credit risk management staff, a risk conscious top cadre in credit risk management, proper two-way communication, the establishment of detailed credit policies and standards and strict adherence to them are some of the effective methods to ensure a strong credit risk culture in an organization.

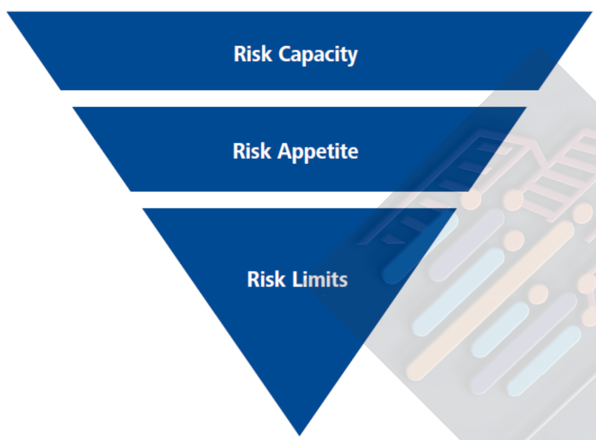
Having a strong set of policies and processes and an auditing and checking mechanism is not enough. It must be backed up by a strong credit culture. For example, if the culture of the bank or financial institution is low risk taking, then the policies and procedures will reflect the strict criteria with which the credit risk will be underwritten. This must be corroborated in all meetings, words, actions and communications. If the senior management of the bank began to extol the advantages of the high rewards embedded in high risk taking and to encourage such deals in the quest for extra profits, it would show a cultural breakdown or conflict, which would not be good for the organization.

A well understood credit risk culture will enable the decision takers and employees in credit risk management to take effective and intelligent risk decisions, ensuring the achievement of the credit risk management objectives. Employees can imbibe the credit risk culture in dissimilar ways. Different organizations have their own methods of achieving this. Whilst most of the banks take junior officers with a cut-off age of mid-20s, through a rigorous selection process, and train them up through hands-on jobs and mentoring, most banks are also open to credit professionals from varied environments and attempt to achieve a blended credit culture.

A strong credit culture promotes good credit decisions. Commitment to quality decisions and continuous learning is an essential element. The recent 2008 Credit Crisis has highlighted the importance of credit culture, the lack of which led to deficiencies and flaws in credit processes and decisions. Credit systems ought to have an early warning mechanism and encourage independent common-sense judgements and reality checks as well a sound logical framework for day-to-day decision making.

Credit risk appetite

Hierarchical approach to risk appetite concepts



Source: Risk Appetite in the Financial Services Industry: A Requisite for Risk Management Today

Credit risk appetite is the level of risk that a bank is prepared to accept to achieve its objectives. It is important for banks to set risk appetite at an appropriate level to ensure credit risks are only accepted and managed within that appetite. According to Deloitte Touché Tohmatsu (2014) appetite must be reviewed and reset in light of changing market conditions and portfolio performance. The crucial features of this definition are: 'willing', which denotes a conscious recognition and acceptance of the risk/return trade-off; 'pursuit', which acknowledges that firms may fail to achieve their goals, while still bearing the risk; and 'strategy' which highlights how appetite should always be considered in light of the firm's overall business model Deloitte Touche Tohmatsu (2014). A credit appetite must be established as a strong foundation. A credit risk appetite statement is drawn up prescribing the following: -

- **Target Market** - Understanding the target market to which the credit would be offered is essential for a number of reasons: (i) it ensures strategies and products are developed in accordance with the market; (ii) the market criteria ensure that no opportunities are missed in the identified target markets and conversely, they will screen out the market segments, where the organization has no risk appetite.
- Minimum Credit Standards - Credit risk appetite will prescribe the minimum acceptable standards of the credit risk required while building the business.
- Sectors: Risk appetite would require the study of major sectors to identify those which are desirable. The sectors identified with good potential would be favoured while the riskier sector would be shunned. Depending upon the sector's attractiveness the risk appetite would vary as follows:

    - ‘No Appetite/Reduce’ – least attractive sector.
    - ‘Grow’ – sector with good potential.
    - ‘Selective Growth’ – sectors that hold reasonable potential.
- Products Offered: Risk appetite would also detail the type of credit products to be developed in line with the risk appetite; while pricing the product, it would be ensured that the risk (selected based on the minimum standards) is adequately priced in.

The above is only guidance as credit risk appetite differs from organization to organization. In large multinational organizations, the credit risk appetite for each subsidiary, division or geographical area would be required.

Credit risk management in non-financial firms

The distinction between financial institutions and non- financial companies is critical to acquiring an understanding of the differences in approach to risk and capital in the two types of organisation. Further, given the relatively advanced state of development of disclosure requirements in financial institutions, this distinction is also relevant when determining how corporations can best publicly disclose exposures and risk management practices. This is an issue that is still not well addressed by those who regulate corporate disclosure requirements.

The diagram below summarizes the key differences between financial institutions and non-financial corporations. In financial institutions risk is part of the intermediation process itself, the role of the financial institution is to intermediate risk.4 By contrast, in non- financial companies' risk is a by-product of the underlying activities of the business lines.

Figure 1: Key Differences between Financial and Non-Financial Companies

	Financial Institutions	Non-Financial Companies
Regulatory	Protect payments system and systemic risk	Focus on corporate governance and disclosure
Nature of Assets	Tradeable, financial assets, market makers Highly diversified portfolio Cash flows largely contractual Diversification improves quality of the portfolio	Balance sheet comprises illiquid assets Risk concentration Underlying cash flows non-contractual Portfolio diversification creates negligible value
Role of Risk	Raison d'être to absorb and/or intermediate risk Risk management is key focus and skill of management Aggregation and integration of company-wide risks	Risk arises from natural physical characteristics of underlying business Lower focus, less skills in the process Fragmented approach
Risk Measurement	Ability to statistically measure risk	Limited ability to measure most of the risks due to limited observations, linkages and causal relationships

Trade credit offered by manufacturing firm in order to increase sales, results in debtor's portfolio which represents credit risk. The offered credit to clients is financed probably by overdrafts, and there is a cost attached to this. Good credit control system is required to evaluate the creditworthiness of the clients, as well as monitoring the credit offered to clients. Analysing and monitoring of credit will be meant to protect the firm from risk of offering this credit.

Receivables are among the largest assets appearing on the balance sheet and require significant commitment of precious working capital resources. An increase or reduction in the amount invested in receivables will usually have a significant (negative or positive) impact on the company's cash flow and on the company's cash cycle, which is the time required to convert goods into cash, from the date the company pays the costs of acquisition of the goods to the date of receipt of the cash from associated sales.

The risk of loss of a receivable and the danger it presents to the survival of the company is the primary force behind the need for analysis and its management. The loss of a large amount of working capital by way of bad debts will almost inevitably lead to the failure of a company.

Credit risk management in financial intermediaries

According to Kwabena (2014) credit risk management in a financial institution starts with the establishment of sound lending principles and an efficient framework for managing risk. Policies, industry specific standards and guidelines, together with risk concentration limits are designed under the supervision of risk management committees and departments (Kwabena: 2014).

Credit risk, also known as counterparty risk, is the risk of loss due to a debtor's non-payment of a loan or other line of credit (either the principal or interest (coupon) or both). Also, credit risk is most simply defined as the potential that a loan borrower or counterparty will fail to meet its obligations in accordance with agreed terms (Kwabena: 2014).

According to Kwabena (2014) in most banks, loans are the largest and most obvious source of credit risk. However, other sources of credit risk exist throughout the activities of a bank. They include activities in the banking and trading books, and those both on and off the balance sheet. Banks are increasingly facing credit risk or counterparty risk in various financial instruments other than loans. These include bankers' acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options and the settlement of transactions (Kwabena: 2014).

Most of the financial intermediaries have credit assets constituting more than 40% of total assets, hence the need for emphasis of systemic study and analysis of credit risk.

Stages of credit risk management in financial intermediaries:

The steps followed by a financial intermediary in the credit risk management include nature and purpose of the credit, type of credit facility, capacity to borrow, security, analyze borrower's financial status, forecasting the repayment capacity, profitability, structure the credit facility, including conditions and covenants and constant monitoring. These steps are further explained in the following paragraphs.

Nature and purpose of the credit

On this step the legal should establish the nature and purpose of requesting debt, to a larger extent it should, the purpose should be legal, non-speculative and should within the priorities of the lender. In addition to this, the debt facility should used to finance the normal business activities of the customer. Debt facility provided should be reflect the client ‘s resources, and thus provide adequate reasons for required use of funds, thus we can determine if resources are not going to be used for money laundering.

Type of Credit Facility

A credit facility is a type of loan made in a business or corporate finance context. Types of credit facilities include revolving loan facilities, retail credit facilities (like credit cards), committed facilities, letters of credit, and most retail credit accounts. Credit facilities' terms and particulars, like those of credit cards or personal loans, are dependent on the financial condition of the borrowing business and its unique credit history. Understanding different types of credit facilities: my rights and legal responsibilities

Bank Loans Bank loans are usually determined by your salary and your bank history. Loans from banks usually have standard terms in their contracts but look out for “the small print”. Check the admin charges, whether interest rates can be changed at any time, and any other conditions. You might be forced to take out life insurance to get the loan – an added expense! Some typical bank loans are:	Hire-purchase Agreements Some people buy cars, furniture or appliances, using an HP contract. The seller arranges finance for you from banks that specialises in this type of loan. You are usually required to pay a deposit and sign an agreement where the loan is registered over the items that you buy. HP is expensive, and you usually end up paying more than double for the item. If you cannot pay for a month or two, you run the risk of having the item repossessed. You will then have nothing to show for all your months of repayments.
Bank Overdraft You can arrange a bank overdraft on your cheque account – usually the account your salary is paid into. This means they will let your cheque account be overdrawn. The interest rate is a lot higher than the prime interest rate. You do not have to repay the overdraft within a fixed time, but the bank will review it at least once a year and can withdraw it at any time.	**Vehicle Finance** Some banks have special divisions that only provide loans for motor vehicles. The interest rates are more favourable than ordinary loans. If you have an accident or your car is stolen, you would still need to repay the loan, unless you had insurance cover. If you stop paying your loan, your car will be repossessed.

Revolving Credit This will be a fixed amount of money that the bank agrees to loan you. You do not have to take it all at once, and as soon as you pay some back, you can re-borrow that amount. This kind of loan is flexible but has a high interest rate.	**Home Loan or Bond** Most people take out a home loan or mortgage bond to buy or build a house. This is a long-term agreement between you and the bank, where the loan plus interest is repaid over 20 or 30 years. The bond is legally registered over your property and if you cannot repay the loan, it acts as the bank's security. Usually, the interest is one of the lowest rates that you will get, but it is linked to the bank's prime interest rates. If interest rates go up, you could find yourself not able to pay the higher repayment amount. In the late 1990s, home loan rates rose to 25%, making many people unable to repay their home loan repayments. This meant that they lost their houses. You are also usually expected to take out life insurance for the value of the bond. Paying extra into your home loan each month, or paying it off sooner, dramatically saves you interest. It is a good idea to put any extra bonuses or money into your bond. Usually, you can arrange with the bank to withdraw any extra payments if you need it. In this way you can use your bond to keep your savings in.
Bank Loans Depending on your circumstances, you might qualify for a longer-term loan, where you have to make fixed repayments every month. The bank might ask you to provide something as security for this loan, such as a piece of land. If you cannot repay the loan, the bank then has the right to keep your asset that you offered for security.	**Specialist Loan Companies** There are many loan companies around, encouraging you to buy your dream holiday, add on a patio to your house, or fulfil other dreams now and pay later. But beware, they are expensive and have hidden costs.
Credit Cards	

If you have a good credit history and a regular income, you might qualify for a credit card at the bank. The banks set a limit based on your circumstances. You can use your credit card to buy goods in most places. If you do not settle the amount in full at the end of the month, you will be charged interest at fairly high rates. There are annual card charges and optional lost card insurance charges.	

Capacity to Borrow

Lenders must be sure that the borrower has the ability to repay the loan based on the proposed amount and terms. For business-loan applications, the financial institution reviews the company's past cash flow statements to determine how much income is expected from operations. Individual borrowers provide detailed information about the income they earn as well as the stability of their employment. Capacity is also determined by analyzing the number and amount of debt obligations the borrower currently has outstanding, compared to the amount of income or revenue expected each month.

Brown and Moles (2008) stresses the importance of obtaining borrowers information on capacity to repay the loan. It is necessary for microfinance to analyze the credit and determine its quality in order to determine the creditworthiness of the counterparty. They emphasize the necessity for such organization to analyze his capacity and willingness to pay according to the agreement. Capacity to repay is the most critical of the five factors; it is the primary source of repayment – cash. The prospective lender will want to know exactly how you intend to repay the loan. The lender will consider the cash flow from the business, the timing of the repayment, and the probability of successful repayment of the loan. Payment history on existing credit relationships – personal or commercial – is considered an indicator of future payment performance. Potential lenders also will want to know about other possible sources of repayment.

The lenders ought to check the legal status of the person who obtains credit. Usually minors, undischarged insolvents, mentally incapacitated persons and in certain societies, women (sometimes married women) are disqualified from entering into contracts on their own. In such cases a guardian is necessary. Similarly, while extending credit to artificial legal persons, the lender should ensure that the persons representing such incorporated entities have the requisite authority to act on their behalf.

Security

Whether security is needed for a credit decision depends upon the level of creditworthiness. If creditworthiness is high and the resultant credit risk is low, the lenders will not insist on any security at all. When security is required, several factors should be considered such as adequacy, sufficiency and the authenticity of the security offered. The security can be either primary or collateral. Receivables, stock, machinery and equipment, real estate and guarantees are accepted as security, amongst others.

Analyze Borrower's Financial Status

Financial status of the borrower is analysed through the use of the financial position which will guarantee that the borrower deserves the funding. It is important to question the ability of the firm to generate adequate cash flows from the operations to their obligations or commitments. Various measures to gauge solvency, liquidity, efficiency and repayment capacity, amongst others, have been developed to study financial parameters relevant from a lender's point of view.

Forecasting the Repayment Capacity

Van (2002) explains that, capacity refers to the ability of the borrower to repay the loan. Investment credit which will yield sufficient profit will enable the borrower to repay the loan. Net income – family living expenses = Surplus. The surplus is used to repay the credit. Most borrowers can easily repay the principal and interest. However, some of them find it hard to repay the principal. Cash flow budgeting technique is used to assess repayment capacity. Good financial management improves repayment capacity and the profitable use of credit. The following will help borrowers to improve their repayment capacity.

1) Extending repayment time-long repayment period
2) Planning repayments to coincide with income
3) Planning and running to minimize overhead costs

4) Stressing enterprises with higher and quicker income-related to this is maximum use of self-liquidating loans.

The lender should have reasonable assurances about the ability of the borrower to meet their commitments when they fall due in future. The shorter the duration of the loan, the more predictable the repayment ability. That is why the analysis of project finance and long-term loans is different from the techniques followed for assessing the repayment ability of short-term loans. In such cases projections are insisted upon with assumptions. The achievability of projections with reference to historic performance and management track record is usually analyzed. Appropriate sensitivity analysis is also undertaken.

Profitability

The commercial lender incurs costs in making credit available to customers. Salaries of employees involved in appraising, granting and monitoring the credit, rent and other overheads should be recovered from the return generated from the credit besides the cost of funds – usually viewed as the interest paid on deposits. In fact, the true profitability should be assessed with cost of capital.

Structure the Credit Facility, Including Conditions and Covenants

A loan covenant is an agreement stipulating the terms and conditions of loan policies between a borrower and a lender. The agreement gives lenders leeway in providing loans while still protecting their lending position. Similarly, due to the transparency of the regulations, borrowers get clear expectations of the lenders.

The loan covenant allows borrowers to prepare for their repayment before and during the agreement. However, in case a borrower defaults in payment or breaches the covenant, the lender is entitled to claim the sum of the loan in full. The covenant makes sure that (1) the lenders' rights are secure, (2) there is a reliable mechanism to rectify the process, and (3) there is a clear illustration of events leading to the borrower's default.

Types of Loan Covenants

In loan covenants, there are three commonly known types of agreements: affirmative loan covenants, negative loan covenants, and financial loan covenants.

Affirmative Loan Covenant

Affirmative loan covenants remind the borrowers that they should perform expressed activities to maintain a healthy operation of their businesses, which will in return create a stable financial performance. However, in breach of this covenant, the borrower will be in default of his/her obligations. As a result, the borrower may receive a grace period to fix the violations or worse, the lender may announce it as a default, and thus demand full repayment.

Samples of Lender Expectations in Affirmative Loan Covenants

The lenders expect the borrowers to perform their tax obligations to both the business and towards their employees.

The lenders expect that the borrowers will maintain credible and verifiable books of accounts. This requirement enables the lenders to be able to ascertain the health of the borrowers' finances each financial year.

The lenders expect the borrowers to obtain dependable insurance policies for their businesses and at least extend it to the lenders as an additional insured party.

To run a business in a bearable business environment, the lenders expect the borrowers to maintain a reliable working relationship with their respective states by enforcing and abiding by the laws.

Negative Loan Covenant

Sometimes, the lenders may want to create a firewall around all major financial and ownership decisions made by the borrower. To achieve this, they ensure that they own rights to notifications like alterations of capital structure. As a result, it streamlines the borrower's credibility and also lowers the chances of defaulting. For this reason, therefore, it's important for businesses or borrowers to get a deep understanding of the terms of the loan covenants to ensure they don't get unintended friendly crossfires since lenders do not intend to lose their investment.

Examples of Lender Restrictions in Negative Loan Covenants

A clear stipulation that the lenders possess the right to prevent mergers or acquisitions without proper notification or full knowledge of the process.

The covenant includes a clause that prevents the borrower from investing without the lender's permission.

Similarly, there is a clause that prevents borrowers from writing-off or selling assets without proper lenders' notification of the transaction.

The borrower must keep check of debt ratios related to service coverages.

The lender may bar the borrower from exercising stock practices like distributing and paying the shareholders.

Financial Loan Covenants

Financial loan covenants keep a guard over whether the borrower is reaching or closely attaining the targets of the estimates provided to the lender. Therefore, the closer to the targets, the more satisfied is the lender. Similarly, the farther from the actual projections, the more likely the borrower may default. Therefore, to be on the safe side, lenders may provide restrictions on the amount of credit the borrower may access at a given period. Below are the details.

Examples of Terms in Financial Loan Covenants

- The lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising.
- The financial loan covenant gives a clear guide on how low or how high a borrower may carry a credit.

Events When the Borrower Breaches the Loan Covenant

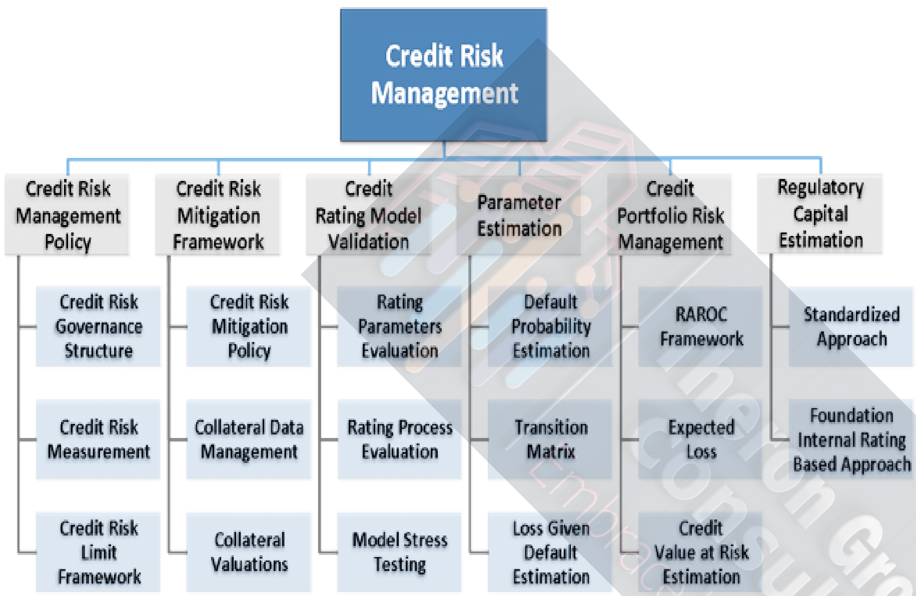
If it reaches a point where a borrower breaches a loan covenant, the lender will undoubtedly take actions to solve the dispute. Sometimes, the negotiations may be easy. In other extreme cases, it will involve stringent measures. Below are the details of both circumstances.

According to the prescribed text, the credit facilities should be structured to suit the purpose for which they are intended to be used. The borrower and supplier of credit have to agree upon several issues, which should be formalized. Credit facility agreements specify mutual expectations of the borrower and lender and respective duties and obligations. Violation of conditions is tantamount to default and the lender can repossess the credit facility and other claims or start legal proceedings for repossession, depending upon the terms of agreement. The supplier of credit should avoid loopholes in agreements and should be meticulous in drafting credit facility agreements. When setting financial covenants care must be taken to build in enough headroom to avoid continuous adjustment yet without reducing the quality of the protection offered by such covenants.

Constant Monitoring

The credit facilities should be monitored closely through various steps including risk limits, capital allocation and periodical reports on the borrower, sector and economy.

Credit Risk Management Process



The credit risk management process tends to be elaborate so as to tackle the challenges associated with credit risk. A strict policy framework is maintained to ensure that the credit risk culture is enforced throughout the organization. The usual methodology is as follows:

- Finalize overall credit risk appetite.
- Establish objectives and strategy – decide the reward/ risk pattern, inclusive of provisioning.
- Roll out credit risk infrastructure to facilitate measurement and ownership of credit risk. Nowadays IT systems also play a key role.
- Identify the right people and ensuring proper communication, behaviour and incentivization.
- Implement appropriate credit risk models – ensure that there is no over-reliance on credit risk models.

QUESTIONS/EXERCISES
1. Explain the factors that decide whether credit risk enjoys a strategic position within a business.
2. What do you mean by credit risk culture? Discuss its importance.
3. Explain the importance of credit risk appetite. What are the factors to be considered while deciding credit risk appetite?
4. Explain how non-financial institutions manage their credit risk exposure. Please elaborate.

5. Do you believe credit risk enjoys a strategic position with all financial intermediaries? Please elaborate.

6. Briefly elucidate how credit risk management is done in financial intermediaries.

7. Explain whether a financial intermediary can shy away from taking credit risk, i.e., be credit risk averse? Please elaborate.

8. One of your friends' states that in order to manage a credit institution, a strong set of policies and procedures are required. He dismisses credit culture as a meaningless word and emphasizes that adherence to the credit policies and procedures would ensure successful credit risk underwriting. Do you agree with this statement? Please explain with reasons.

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