



## *End of Studies Project*

*Topic :*

# **Development of a mapping of operational risks related to the documentary credit process: the case of TSB**

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## **LIST OF ABBREVIATIONS**

AMA: Advanced Measurement Approach

BCBS: Basel Committee on Banking Supervision

BIA: Basic Indicator Approach

CBT: Central Bank of Tunisia

CRD: Capital Requirements Directives

LC: Letter of Credit

I: Impact

ICC: International Chamber of Commerce

L: Likelihood

SA: Standard Approach

SWIFT: Society for Worldwide Interbank Financial Telecommunication

TFD: Trade Finance Department

TSB: Tunisian Saudi Bank

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## **INTRODUCTION**

In the wake of numerous scandals that have raised doubts about the way banks manage their credit and market risks, risk management has become a core issue for both banks and financial institutions around the world.

Indeed, since the beginning of 2000s, several operational malfunctions have occurred, leading to considerable financial losses for the banks. In this respect, we can recall the Kerviel Affair of General Society in January 2008 which recorded a loss of nearly 10€ billion following a fraudulent position of one of its traders. The Eron case, Worldcom, Parmalat, all these events came to warn the banks that there is another source of losses which requires a major concern, it is the operational risk.

To maintain its financial viability and to keep sustainability bank should realize that operational risk management should be identified and introduced as an independent risk management function across the entire bank.

Within this framework, the regulatory authorities have launched several debates on operational risk management since June 1999. This dialogue led to the implementation of the Basel II agreements in 2004. Thus, with this reform, the new capital adequacy framework requires banks to hold capital explicitly towards operational risk.

This quantitative approach to operational risk management undertaken by the Basel Committee seems to be insufficient for the assessment of all operational risks. An upgrading of operational risk management system implies then a combination between quantitative and qualitative approaches.

In a similar way, banks should implement control systems to improve the management of operational risks, reveal areas of weakness and help prioritize subsequent management action which allow reducing the potential frequency and/or severity of a loss event.

Over the past two decades, rapid technological changes, deregulation and the tendency to increase volatility in asset prices have led to the explosion in financial activities, and therefore the size and value of payment flows, both within and outside the country. In this new environment, maintaining the integrity of the payment system is a goal of special significance,

which requires the joint efforts of market participants and relevant authorities to upgrade risk management procedures.

In fact, the progressive globalization and development of international trade have increasingly pushed companies to use international tools of payment. Actually, documentary credit, which is the most secure and widely used method of payment, has its advantages for both exporter and importer. However, this payment tool is often faced with operational risks.

In order to mitigate operational risks linked to documentary credit process, banks must implement a structured and effective approach. In that regard, operational risk mapping has become an integral part of risk management activity.

Actually, the purpose of risk mapping is to apprehend all the factors likely to affect the activities and their performance in order to provide a systematic basis for corrective measures to achieve and enhance the effectiveness of the control system.

With the aim of reducing errors in transactions processing, preventing fraud and maintain the integrity of internal controls and by drawing inspiration from the mapping of risks linked to money laundering and terrorist financing. The TSB has decided to set up an operational risk mapping project. Thus, it is in this logic that we present our work and this is in order to find an answer to our main problem which is:

**What is the approach to be followed in order to set up a mapping of the operational risks linked to the documentary credit process within TSB?**

The research problem consists of the following sub-problems:

- ❖ What are the risks that the bank may incur?
- ❖ What is the international regulatory framework for operational risk?
- ❖ What is a documentary credit and what are its characteristics?
- ❖ What is the appropriate approach for setting up an operational risk map?



The remainder of this study is structured as follows. The first chapter develops the various banking risks and the documentary credit as one of the fundamental activities of the bank in foreign trade. At the outset of this chapter we present the different risks inherent in the banking activity and then we expose payment methods used in international trade. Next, we focus on the emergence of documentary credit and after that we attempt to present governing law and rules for documentary credits and then we move on to the description of the documentary credit process. We end our chapter with a display of the principal risks related to the documentary credit.

In the second chapter, we begin by presenting operational risk in its international and national context, and then we will focus on the steps involved in mapping operational risks.

The final chapter is devoted to the empirical part; we are going to set up the mapping of operational risks related to the documentary credit process for the TSB.

# **CHAPTER ONE: BANKING RISKS AND INTERNATIONAL PAYMENTS**

## **1. INTRODUCTION**

Over the past decades, banks have been affected by the advent of major natural and economic disasters. In order to ensure its sustainability and soundness, risk management has become a major concern for the bank it is also a concern of policy makers to maintain the safety and soundness of the financial system.

International payment, which is one of the bank's main activities, is often dealt within an uncertain environment. In order to minimize the risk and adapt the evolution of trade around the world banks have not ceased to propose and create increasingly sophisticated financing and payment techniques whose objective is to secure economic operators. In this respect, documentary credit is an instrument that guarantees payment for exporters and allows importers to ensure the proper termination of the contract while including documentary conditions allowing the efficient conduct of the process.

Our chapter is divided into seven sections. In the first section we present the risk inherent in the banking activity in the second section we focus on different payment methods. The third section is dedicated to the emergence of the LC; the fourth section is devoted to governing law and rules for documentary credits; the fifth section develops the LC operation mechanism. The sixth section sets out considerations when choosing an LC and the last section deals with the impact of COVID-19 on trade finance.

## **2. THE RISK INHERENT IN THE BANKING ACTIVITY**

In recent years, the term risk in banking have got substantial importance and become the central concern especially after the Global Financial Crisis. As a result, there is an increased demand for the adoption of effective risk management frameworks in order to ensure the sustainability and profitability.

Numerous academics and practitioners attempt to explain the risk factor. In this regard, Ghosh (2012) defines banking risk as a potential loss that may occur through some

antagonistic events such as economic slowdown, adverse changes in fiscal and trade policy or unfavorable movements in interest rates.

Bessis (2002) and Schroeck (2002) describe bank risk as the result of undesirable impacts on returns due to several distinct sources of uncertainties.

Actually, the available literature shows different types of banking risks including financial, non financial and other risk. The categories of banking risks are divided according to their nature as follows:

- ❖ **Financial risk:** it’s the risk associated with different banking and financial activities.
- ❖ **Non-financial risk:** this includes risks that are linked to external events (social, political, or economic phenomenon) or internal events (technologies, human resources...).
- ❖ **Other risks:** these are specific risks that can negatively affect the financial balance either in a country or worldwide.

As mentioned above, banks are subject to various risks that go beyond financial risk. These risks can be illustrated as follows:

**Table 1: Types of risks in banking sector**

	<b>Types of Risks</b>	<b>Subcategory</b>	<b>Description</b>
<b>Financial Risk</b>	<b>Credit</b>	Default	Risk of an asset or loan becoming all or part irrecoverable in the event of Default.
		Concentration	
		Collateral	
	<b>Market</b>	Interest rate	Risk associated with financial instruments transacted in own markets and/or for transactions in markets with low liquidity.
		Exchange rate	
		Commodities	
		Trading	
		Real estate	
	<b>Liquidity</b>	Mismatches	Lack of liquidity to meet commitments.
		Concentration	

<b>Non Financial Risk</b>	<b>Operational</b>	Fraud/Errors/Processes	Risk associated with inadequate processes, people and information systems failures.
		Information technologies	
		Safety/Environment	
	<b>Strategy</b>	Decisions/Business	Changes in the market.
	<b>Reputation</b>	Public image	Negative image perception.
	<b>Compliance</b>	Rules/Legal	Breach of regulations.
	<b>Country</b>	Political upheavals	Risk of default of a state
<b>Other Risks</b>	<b>Pension Fund</b>	Devaluation of the fund	Contributions not foreseen.
	<b>Solvency</b>	Capital	Inability to cover business losses.
	<b>Contagion</b>	Asset	Contamination of financial sector agents.
	<b>Systemic</b>	Financial shock	Propagate the entire financial sector.

Source: Banking Risks: Lessons from the First Financial Crisis of the 21st Century

## 2.1 FINANCIAL RISKS

### 2.1.1 Credit Risk:

*“Credit risk is the potential loss resulting from a debtor’s inability to honor its commitments. This commitment may be to repay borrowed funds, the most classic and the most common case; risk generated in the balance sheet. This commitment may also be to deliver funds or securities in connection with a forward transaction or a given guarantee or; the risk recorded in the off-balance sheet”<sup>1</sup>.*

Bessis (2010) defines credit risk as one of the most important risk that the bank faces. In such manner, exposure to credit risk is the biggest and main source of problems for most banks. Such risk does not only flow from loans but also from other activities on both banking book and trading book, as well as on and off balance sheets.

<sup>1</sup> A. SADRI, ‘‘ Audit et contrôle interne bancaire’’, Edition AGFES, Paris 2002, P. 39 et 40

The circular N° 2006-19 of 28 November 2006, relating to internal control defined the credit risk in article 22 as follows:

*“Credit risk is defined as the risk incurred in the event of default by counterparty or counterparties considered to be the same beneficiary with the meaning of the regulations in force”*

This risk can be divided into several subcategories: the most important are the following:

❖ **Default risk<sup>2</sup>:**

Default risk is the risk of the borrower not complying with the debt service of a loan resulting from a default event, over a certain period of time. This risk may occur from, the delay in payment, the restructuring of an operation and the bankruptcy or liquidation of the debtor, which may result in a total or partial loss of the amount lent to the counterparty.

❖ **Concentration risk:**

Losses resulting from the concentration of large loans to little number of borrowers and/or risk groups, or in few sectors of activity;

❖ **Collateral impairment risk:**

This risk does not result from direct losses but from the probability of default that may occur due to the decrease in the quality of the collateral.

The Basel Committee on Banking Supervision - CSBB defines credit risk as the possibility that the bank or counterparty borrower may not meet its obligations in accordance with the agreed terms (CSBB, 2000).

## **2.1.2 Market Risk:**

*“Market risks are defined as loss risks on balance sheet positions resulting from changes in market prices”<sup>3</sup>. They cover:*

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<sup>2</sup> Corresponding Author: Marco Amaral [www.aijbm.com](http://www.aijbm.com)

<sup>3</sup> CIRCULAIRE AUX BANQUES ET AUX ETABLISSEMENTS FINANCIERS N°2018-06

- The risk relating to interest rate instruments and securities in the trading book.
- The foreign exchange risk incurred for all balance sheet and off-balance sheet items.

Numerous academics and practitioners attempt to explain this concept. In this vein, Caiado and al (2008) point out that banking activity expose banks to market risks either through on or off-balance sheet position. Correspondingly, such risk reflects the possibility of loss which may arise from several conditions. In particular, the variation in the interest rate, exchange rates, stock market prices and commodities.

Neves and Quelhas (2013) claim that this risk is inevitable in the portfolio composition, which means it, cannot be eliminated through diversification, as market risk influences the behavior of all securities as well as all portfolios.

In the same line of thought, IFRS 7 (IASB, IFRS 7, 2005) presents market risk as the risk that the fair value or future cash flow of a financial instrument will fluctuate due to changes in three types of risk, namely:

❖ **Exchange risk:**

The risk that the fair value or future cash flow of a financial instrument will fluctuate due to changes in exchange rates;

❖ **Interest rate risk:**

*Interest rate risk represents for a credit institution the possibility that its profitability or the value of its equity capital may be affected by changes in interest rates<sup>4</sup>*

The Basel Committee represents three main types of interest rate risk including gap risk, basic risk and option risk

- The Gap risk comes from the term structure of the interest rates
- The Basic risk is related to the relative variations in the interest rates of financial instrument with similar maturities but using different interest rate indices
- Option risk emerges from option derivatives or from option embedded in a bank's asset's liabilities.

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<sup>4</sup> J.C.AUGROS, M.QUERUEL, « risque de taux d'intérêt et gestion bancaire », Economica, Janvier 2000.

According to article 35 of circular N° 2006-19 of CBT “*The overall interest rate risk is defined as the risk incurred in the event of a change in interest rates, measured on balance sheet and off balance sheet transactions with the exception, where applicable, of transactions subject to the market risk mentioned in chapter 2 of this circular*”

❖ **Other price risks:**

The risk that the fair value or future cash flow of a financial instrument will fluctuate due to changes in market prices (other than interest rate risk or currency risks).

### **2.1.3 Liquidity Risk:**

Monitoring liquidity risk has become a major concern to ensure the stability of the banking system. In fact, this risk requires proactive and adequate tracking.

*The liquidity risk definition refers to the lack of marketability of a security or assets, which cannot be sold or bought quickly enough to prevent or minimize a loss. It is typically reflected in large price movements or uncommonly wide bid-ask spreads<sup>5</sup>.*

IFRS 7 (IASB, IFRS 7, 2005) defines liquidity risk as the risk that an entity will encounter difficulties in meeting commitments associated with financial instruments.

Alcarva. (2011) states that liquidity risk may result from the mismatch between banks' assets and liabilities maturity patterns.

Pinho et al. (2011), argue that the concept of liquidity can be used to describe financial instrument and their markets. Indeed, a market is said to be liquid when the assets are usually convertible into cash.

Following this line of thought, Martins and al. (2012), found that in times of crises banks try to have an adequate level of liquidity to comply with the measures imposed by the central banks of their countries. The aim of these measures is to support banking activities and strengthen the financial system as a whole.

In this context, we can recall the financial crisis of 2007 in the US, which is the best illustration of the effect that can generate liquidity risk and its impact on the financial system.

In order to manage the liquidity risks and to make the international banking system more resilient, new rules on bank capital and funding have been issued by the Basel Committee on Banking Supervision (BCBS). Consequently, the Basel III Accords have introduced two new

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<sup>5</sup> Liquidity Risk/ Definition and meaning / Capital.com

ratios: the *Liquidity Coverage Ratio (LCR)* and the *Net Stable Funding Ratio (NSFR)*, in order to help improve the banks' short-term (LCR) and long-term (NSFR) balance sheet resilience.

$$LCR = \frac{\text{Stock of high quality liquid assets}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

According to the Basel Committee, the aim of LCR is to ensure that banks maintain an adequate level of high-quality liquid assets that can be converted into cash to meet their liquidity needs during a month.

$$NSFR = \frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$$

The aim of NSFR is to ensure that long-term assets are funded with at least a minimum amount of stable liabilities in relation to their liquidity risk profiles and to restrict excessive reliance on short-term wholesale funding (for a one year horizon).

## **2.2 NON-FINANCIAL RISKS**

### **2.2.1 Operational Risk:**

The Basel Committee defines the operational risk as the *“risk of loss resulting from inadequate or failed internal process, people and systems or from external events”*

Operational risk is the risk of a company's internal practices, policies and systems that are not adequate to prevent loss, due to market conditions or operational difficulties. Such deficiencies may arise from inaccurate risk measurement or reporting, or from a lack of control over sales personnel, while operational risk is more difficult to define with precision than market or credit risk, many believe that it has contributed to some of the widely publicized losses in recent years. Along with market risk and credit risk, operational risk is one of the three components of the first pillar of capital requirements for credit institutions under Basel II;

*This risk is the subject of our work, so it will be well detailed below.*



### **2.2.2 Strategy Risk:**

Strategic risk refers to the risk arising from the basic decisions made by the director's for the organization's objectives. That risk appears essentially when there is inadequacy of decision with established objectives.

### **2.2.3 Risk of Reputation:**

The Basel Committee (2009) defines the reputation risk as *“The risk arising from negative perception on the part of customers, counterparties, shareholders, investors or regulators that can adversely affect a bank's ability to maintain existing, or establish new, business relationships and continued access to source of funding”*.

Typically, that risk arises when there is a loss of reputation or goodwill in a bank due to several reasons such as non-compliance to regulatory norms, frauds, getting stuck into legal cases etc.

### **2.2.4 Risk of Compliance:**

Compliance risk is defined by the Basel Committee as *“The risk of legal or regulatory sanctions, financial loss, or loss to a reputation that a bank may suffer as a result of its failure to comply with all applicable laws, regulations, and codes of conduct and standards of good practice”*.

### **2.2.5 Country or Sovereign Risk:**

Country risk or sovereign risk refers to the risk that the government may default its debt or other obligations. It is also a risk that generally comes with investing in a country or providing funds to the government. In a context of disasters, sovereign risk is the economic impact a government faces in the event of a disaster that affects its citizens.

### **2.2.6 Risk of the Pension Fund:**

It results from the potential devaluation of defined benefit Pension Fund assets or from the decrease of the respective expected returns, which imply the realization of unanticipated contributions (MBCP - Millennium Banco Commercial Português, 2012).

## **2.3 OTHER RISKS**

### **2.3.1 Risk of Solvency or Capital:**

The bank's initial concern should be the long-term sustainability of the industry. This is related to the solvency or default of the bank. Two serious situations may lead to solvency problems, including a large number of non-performing loans in the credit account of the bank's management department, or a significant drop in the value of its securities investment and serious capital losses.

### **2.3.2 Risk of Contagion:**

Verifiable effect when a problem of a bank occurs to other banks, resulting from the nature of the financial system that promotes inter-correlation between banks (IMF - International Monetary Fund, 2007).

### **2.3.3 Systemic risk:**

Systemic risk is defined as the risk that a particular event could lead to a chain reaction of considerable negative effects on the financial system as a whole, resulting in a general crisis in its functioning.

## **3. PAYMENT METHODS USED IN INTERNATIONAL TRADE**

When it comes to commodity trading, there is always a certain degree of risk and trust. Whether you are a buyer or a seller, you will face certain risks when conducting international transactions. As a rule, the degree of risk involved depends largely on the payment methods. Commonly, there are many ways to make payments, including a different level risk for collection. We will try to explain these methods from the most secure to the least secure for exporters.

- ❖ Cash in advance
- ❖ Letters of credit
- ❖ Documentary collections
- ❖ Open account
- ❖ Consignment

### **3.1 Cash in advance**

Cash in advance is also known as prepayment, because the buyer makes the payment in full before the ownership of the goods is transferred. Ordinarily, there are many cash payments methods in advance, credit card payments and electronic transfers are the most common payment tools. This form of payment is an attractive option for sellers however it presents a much greater risk for buyers because it generates an unfavorable cash flow and there is no express guarantee of receipt of the goods. This is generally the recommended option for sellers who are dealing with new buyers or buyers with poor creditworthiness and/or high value products.

### **3.2 Letter of Credit**

Letter of credit or documentary credit is one of the safest payment methods available to international traders. It's a letter from the bank ensuring that the buyer's payment to the seller is received on time and for the correct amount. Indeed, the buyer establishes a credit and pays his bank for this service. This method of payment is useful when there is no legitimate credit information about a foreign buyer or the information is difficult to secure, but the seller is satisfied with of the foreign buyer bank. The LC also protects the buyer as he doesn't have to make the payment until the goods are shipped as promised.

### **3.3 Documentary collections**

Documentary collection is an international transaction in which banks act on behalf of the buyer and seller to collect payment for a good. In fact, the exporter presents the appropriate documents to a bank in his country, which forward them to a bank in the buyer's country. The major difference between the letter of credit and documentary collection lies in the fact that the importer's bank does not guarantee payment in the case of documentary collection.

### **3.4 Open account**

Open account is a simple and convenient way to conduct payment. Under this method the goods are shipped and delivered before payment. It is an attractive option for buyers, especially in cash flow. However, the seller carries all the cash flow pressure and faces high risks. Accordingly, with this payment method the seller attaches the goods to the buyer with a credit period during which the buyer must pay in full.

It's generally recommended to use "open accounts" only for reputable buyers, buyers and sellers with established and trusted relationships, and/or for relatively low-value export products (to minimize risk).

### **3.5 Consignment**

The consignment process is similar to opening an account in which payment is only made after the buyer has received the goods. The difference is in the payment point, in the case of shipment a foreign buyer is obliged to pay only after the goods have been sold to the final customer. This international payment method is based on a contract whereby a foreign seller retains ownership of the goods until they are sold. In return, the buyer is responsible for managing and selling goods to the end customer.

## **4. THE EMERGENCE OF THE DOCUMENTARY CREDIT**

### **4.1 The essence of credit letter: basic understanding**

*The letter of credit originated in the middle Ages. The French word "accréditif" means "a power to do something which in turn is the derivative of Latin word, "accréditivus", meaning trust. In the middle Ages, a letter of credit is issued because the travelers do not take cash with them on their journeys, and they would give their money in trust to their bank<sup>6</sup>.*

*Today, letter of credit is the most frequent payment method in the international trade and has been described by English judges as "The life blood of international commerce"<sup>7</sup>. Since this method provides a certain degree of protection for both parties (seller and buyer).*

This method of payment is useful in transactions which involve high levels of risks thereby the implementation of this instrument can mitigate the risk of transaction for either party. It's both a payment instrument and a bank guarantees that protects the supplier and the buyer to fulfill one of the primary obligations in a contract. However, the execution of LC implies the reception of documents to cover risk since this instrument guarantees that the issuing bank will pay the agreed contract amount when the supplier proves that it delivered the goods.

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<sup>6</sup>Polat, p. 209.

<sup>7</sup>Ozalp, p. 17.

An LC is a contractual agreement independent of the sales contract on which it is based. Therefore it doesn't matter for the bank whether each party keeps the term of the sale agreement. The bank's payment obligation is only conditioned on the seller's compliance with the terms of the letter of credit. To that effect, it should be noted that banks handle only documents and not concerned with the underlying transaction.

To put a nutshell, the letter of credit is regarded as the safest form of international payment as long as the conditions of the credit are met. Correspondingly, this mechanism provides guarantee for the importer, since no payment obligation arises until the documents proving that the goods have been shipped as promised are presented. An LC is needed when it is difficult to obtain reliable credit information about a foreign buyer instead you can rely on the creditworthiness of the buyer's foreign bank.

## **4.2 Participants under a letter of credit**

### **❖ Applicant or account party (buyer/importer)**

The buyer of goods / services (Importer) on whose behalf the credit is issued.

### **❖ Beneficiary (seller/exporter)**

The exporter of the goods / services (seller) on whose favor the credit is issued and who obtains payment on presentation of documents that meet the terms and conditions of the LC.

### **❖ Issuing Bank (the importer's bank)**

The issuing bank opens or issues letter of credit in accordance with the applicant's instructions.

### **❖ Advising Bank**

The advising bank (usually a bank located in the exporter's country and through which the credit has been advised). The advising bank or the notification bank is usually a branch or agency of the issuing bank.

#### ❖ **Paying Bank/Accepting Bank**

This is the bank that issued the draft; it can be the issuing bank, the notification bank or another designated bank.

#### ❖ **Negotiating Bank**

The negotiating bank is the bank that checks documents and confirms the terms and conditions on behalf of the beneficiary to avoid discrepancies

#### ❖ **Confirming Bank**

The confirming bank confirms and guarantees to undertake the responsibility of payment or negotiate acceptance under the credit

### **4.3 Types of letters of credit**

There are different types of letters of credit, and each of them depends on the liability incurred by the bank. The most common types are as follows:

#### ❖ **Sight or term/usance**

This letter of credit may enable the applicant to pay immediately upon presentation of the specified documents (sight letter of credit), or to pay on a future date as specified in the sales contract (term/usance letter of credit)

#### ❖ **Revocable or irrevocable**

The letter of credit can be revoked and this when the buyer decide to cancel or amend it without prior notification to the beneficiary. In that case, neither the issuing nor advising bank enters into a commitment of payment to the seller. Revocable letters of credit are therefore holistically unconfirmed.

Irrevocable LC cannot be cancelled without the consent of the beneficiary in advance. In other word, it implies the agreement of both parties for it to be amended.

#### ❖ **Unconfirmed or confirmed**

An unconfirmed letter of credit is an LC where payment is carried out by only one bank (issuing bank) which leaves the seller exposed to the payment risk of the foreign bank and the political risk of the importing country. In addition, the advising bank acts only as

an intermediary and helps process transaction since there is no other confirmation or guarantee.

For more security, exporters need the letter of credit to be confirmed by another bank in their country. In this regard, the payment will be guaranteed by the issuing bank as well the confirming bank. To do so, the second bank makes the payment to the seller and in turn requests the payment from issuing bank.

In short, we can notice that a confirmed LC is the safest method of payment since it ensures an extra guaranty and the holder of the credit (the exporter) must be assured that he will get the payment from the issuing bank if he complies with the terms of payment.

#### **4.4 Methods of payment for documentary credit**

There are four methods of payment for documentary credit:

##### **❖ Payment at sight**

The beneficiary is paid the amount of the credit as soon as the notifying and confirming bank has received the documents (the bank has seven days to check the conformity of the documents). If the credit is not confirmed, the notifying bank will only pay the exporter after the issuing bank has covered the amount.

##### **❖ Payment by acceptance**

On the due date the beneficiary of a documentary credit presents the documents with a draft drawn on (the issuing bank, the confirming bank, the applicant or on a third party).

The beneficiary can also discount the draft or wait for the maturity date.

##### **❖ Deferred payment**

A deferred payment letter of credit, also known as usance letter of credit, is a commercial LC that provides that the exporter will be paid not at the time the beneficiary makes a complying presentation, but on a deferred date indicated in the LC.

#### ❖ **Payment by negotiation**

If a credit is available with a nominated bank by negotiation, the nominated bank may negotiate a complying presentation. UCP 600 has defined negotiation as the purchase of drafts and/or documents as part of a confirming presentation.

### **4.5 Special letter of credit arrangements**

LCs may also take special forms depending on the nature of protection required. They are as follows:

#### ❖ **Red clause letter of credit**

A red clause letter of credit also called expected credit is a special type of LC that authorizes the nominated bank to advance payment to the seller before shipping/presenting the documents.

The designated bank provides pre-shipment credit to the beneficiary in accordance with the authorization provided by the issuing bank. If the beneficiary fails to export the goods or fails to repay the advance payment, the nominated bank receives the payment from the issuing bank.

#### ❖ **Revolving letter of credit**

A revolving letter of credit is an LC in which, according to its terms and conditions, the amount is renewed or reinvested without requiring specific amendments to the credit. It can revolve with time and value. This credit is usually used for local trade and sometimes for imports. With a revolving LC, the issuing bank restores the credit to its original amount once it has been drawn down.

#### ❖ **Transferable letter of credit**

A transferable letter of credit is an LC that the original beneficiary can transfer to one or more second beneficiaries. This type of credit is particularly used when there are intermediaries in a transaction. That is to say, when an LC is issued as transferable the payment obligation under the original LC can be transferred to one or more “second beneficiaries.”



#### ❖ **Back to back letter of credit**

It's a contract where one irrevocable LC serves as the collateral for another. Back-to-Back letter of credit is a negotiable instrument in which the seller obtains a letter of credit from the buyer and in turn he transfers it to his supplier, in simple words, the seller first receives the buyer's letter of credit to guarantee timely payment, and then he forwards the LC to someone from whom he buys goods and services.

#### ❖ **Standby letter of credit**

A standby letter of credit is a payment guarantee issued by a bank on behalf of a customer. Indeed, if the customer fails to fulfill the contractual commitment this letter will be used as "payment of last resort". Standby letters of credit are created as a sign of good faith in commercial transactions and are evidence of the buyer's credit quality and repayment ability.

### **4.6 Documents required under letter of credit**

According to article 5 of UCP 600 "*Banks deal with documents and not with goods, services or performance to which the documents may relate.*"

The letter of credit is a method of payment based mainly on documents. For this reason, documentation forms the backbone and the most important aspect of the LC structure.

The common documents specified in the letter of credit are discussed below:

#### ❖ **Commercial invoice:**

It is the content file and the seller's bill. It contains detailed information about the goods sold, prices and any other fees. It also contains information about discount (if provided by the seller). The correctly filled commercial invoice should comply with the sales contract or letter of credit.

The commercial invoice should normally contain the following information:

- ✓ Name and address of seller
- ✓ Name and address of buyer
- ✓ Date
- ✓ Terms of payment
- ✓ Price, including freight, handling, and insurance if applicable
- ✓ Shipping information
- ✓ Weight, quantity, packaging, etc...

❖ **Packing list:**

This provides detailed information on individual packages shipped to the buyer.

❖ **Transport documents:**

Since shipment is the most critical condition for payment, all letters of credit insist on providing written evidence to support the exporter's claim for shipment. The bill of lading is issued by the shipping company, just in case the goods were shipped by sea, if it is air consignment, an air waybill is issued, and if it is land transport, a rail receipt truck is issued. However, in case where the exporter chooses a multimodal transport system, it will issue a combined transport document. These documents are regarded as proof of shipment.

❖ **Inspection certificate:**

Since the goods must meet agreed quality standards, most letters of credit require inspection certificates. This instrument must be submitted as a certificate of goods inspected by a qualified government or private agency.

❖ **Certificate of insurance:**

The insurance policy is the legal proof of the insurance contract, which shows all the details of the underwriting risk, the insurance certificate applies to "floating" or "open" insurance, which contains a statement about the value of each shipment and is signed by the exporter himself.

❖ **Movement certificate (EUR1):**

*A EUR1, also known as a "movement certificate", enables importers in certain countries to import goods at a reduced or nil rate of import duty under trade agreements between the UE and beneficiary countries.<sup>8</sup>*

❖ **Certificate of origin:**

This certificate is intended for the importer. It indicates the place of origin of the goods.

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<sup>8</sup> [www.chamber-international.com](http://www.chamber-international.com)

## 4.6 Reasons for using Letter of Credits

The letter of credit aims to provide a sense of security in terms of payment to the seller and credit to the buyer. The concept is about using the bank as a mediator between the seller and buyer to make a payment. If an LC is used, the exporter has a guarantee of payment from the issuing bank.

Letters of credit is a payment method that can convert sales into cash in a relatively risk-free and timely manner. For some exporters, especially those with poor financial conditions or high cash flow requirements, this method may be the only acceptable option.

The letter of credit also provides a guarantee for the buyer, because if the document does not ensure full compliance with the buyer's terms, the bank will not pay. On the other hand the buyer will also be assured that the goods will be delivered in accordance with the requirements of the LC.

## 4.7 Advantages and disadvantages of LC

Before using letters of credit you ought to consider their advantages and disadvantages:

- **Advantages of LC for the importer**

- The importer may be granted a credit
- Payments are made after fulfillment of the seller's contractual obligations.
- The importer can expect the goods to be delivered in due times
- The buyer can determine the shipment period by using a LC

- **Advantages of LC for the exporter**

- The letter of credit reduce the default risk if the importer
- The seller receives money on fulfilling terms
- The LC may be employed as security in favor of one or more sub-suppliers
- With LC the seller can reach out new customers

- **Disadvantages of letter of credit to importer**

- LC is based on documents, not physical verification of goods
- Currency fluctuations in another downside to the letter of credit

- The importer have to pay high LC fees to the issuing bank
- **Disadvantages of letter of credit to exporter**
  - Time consuming procedures
  - Under LC opening procedures there are certain bank costs
  - Currency fluctuation is another disadvantage of LC

## **5. GOVERNING LAW AND RULES FOR DOCUMENTARY CREDITS**

### **5.1 The Uniform Customs and Practice (UCP) for Documentary Credits**

The Uniform Customs and Practice for documentary letter of credit “UCP 600” are international rules issued by the international chamber of commerce (ICC), which aims to facilitate the flow of international trade and to regulate international banking practices related to letter of credit. UCP are applicable across countries and consist of 39 articles. UCP 600 replaced UCP 500 in July 2007 with the aim of reducing ambiguity and the possibility of rejecting documents.

These rules are more flexible than international or national laws because they are based on the experience of trade bankers, importers, and exporters in collating actual trade practices. The UCP are also easier to update than international law or treaties (Jimenes 2012).



**According to the UCP 600 all credits are irrevocable**

### **5.2 INCOTERMS**

Understanding incoterms is a vital part of international trade when exporting product internationally you must agree to sell your goods based on eleven Incoterms.

Incoterms is short of international commercial terms which are published by the ICC and relate to international law that are accepted by governments and legal authorities around the world. The ICC have published the latest version of Incoterms in 2020

Incoterms clearly states which tasks; costs and risks are associated with the buyer and which are associated with the seller.

❖ **EXW (Ex Works)**

Under the EXW term, the seller is responsible for making the goods available at its premises the parties can also agree on another named place such as factory, office or warehouse.

❖ **FCA (Free Carrier Alongside)**

With FCA, the seller is responsible for delivering the goods to the buyer's nominated premises. He needs to load the stocks into the buyer's transportation. Then, the seller organizes the shipping, including export clearance and meeting security requirements.

❖ **FAS (Free Alongside Ship)**

The seller delivers the goods alongside the buyer's vessel at the named port of shipment. It means that the buyer bears all costs and risks of loss or damage from that moment.

❖ **FOB (Free On Board)**

The seller clears the goods for export and delivers the goods on board the vessel at the designated port of shipment. The distribution of risks is almost equal between the buyer and the seller.

❖ **CFR (Cost and Freight)**

CFR incurs more significant risk and responsibility for the seller who pays for the carriage of the goods up to the named port of destination.

❖ **CIF (Cost, Insurance and Freight)**

The seller clears the goods for export and delivers them when they are on board at the port of shipment. The seller bears the cost of freight and insurance to the designated port of destination. Also, he is responsible for any damage to the goods on board the ship.

❖ **CPT (Carriage Paid To )**

CPT goes beyond FCA by specifying that the seller bears the costs of shipment to the buyer's place of destination. The seller clears the goods for export and delivers them to the carrier or another person stipulated by the seller.

❖ **CIP ( Carriage and Insurance )**

This is the same as the CPT's terms, except that the seller must purchase insurance in addition to paying freight and export customs clearance procedures. No risk during transportation.

❖ **DAT ( Delivered and Insurance)**

DAT refers to the seller delivering the goods, once unloaded from the arriving means of transport. Goods are placed at the disposal for the buyer at the named terminal, at the named port or place of destination

❖ **DAP ( Delivered at Place)**

The seller delivers the goods to a named place of destination but is not responsible for unloading. His responsibilities include packing, export clearance, carriage expenses and any terminal costs up to the agreed destination port.

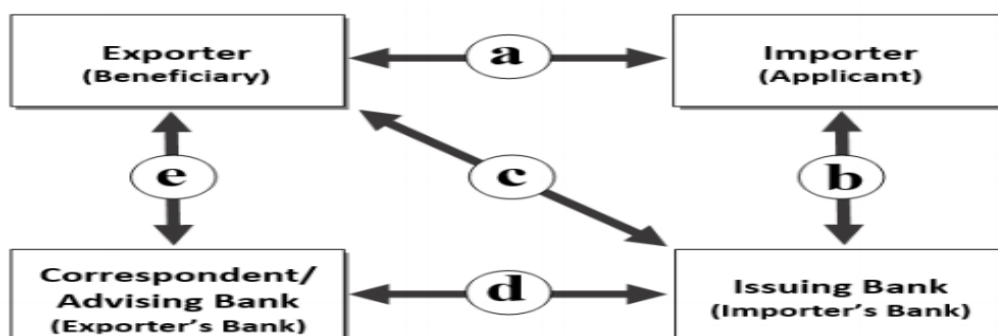
❖ **DDP (Delivered Duty Paid)**

DDP means the seller bears all risks and costs associated with clearing and delivering the goods to the designated place.

## **6. LETTER OF CREDIT OPERATION MECHANISM**

After an irrevocable LC is opened, the terms of the letter of credit usually require document operations. Therefore, it requires each party to assume contractual obligations when "accepting" it as a general rule of communication between partners (Biswas, 2011). Therefore, the decision to use letters of credit in foreign trade requires a basic mechanism (Baker, 2000). In such manner, Bergami (2006) point out that the contracts are divided into five. Examples of possible contracts are shown in figure below:

**Figure 1: The Contractual Agreement of Letter of Credit Transaction**



Source: Bergami(2011)

As shown in the figure above, there are five relationships in LC transactions. First, the basic sales contract between the importer and the exporter. Second, there is a credit issuance and repayment agreement between the applicant (importer) and the issuing bank. Third, the letter of credit contract agreement between the issuing bank and the beneficiary (exporter). Fourth, the payment agreement between the issuing bank and the advising bank.

This relationship is only applicable when the credit amount is confirmed. In other word, the confirming bank will replace the advising bank and fifth, the credit recommendation and payment engagement between the confirming bank and the beneficiary.

The stages to be followed in executing the letter of credit contract are as follows:

## 6.1 Establishment of Sales Contract

The basic part of each letter of credit is the sales contract between the buyer and the seller. This contract is seen as the basic point for triggering other contracts. Indeed, ‘without this underlying contract the others contracts will not arise’ (Obayemiet. al. 2015 p. 57).

According to Schwenger, Hachem&Kee (2012) importers agree to establish a contract for the sale of goods at a certain price, in which the payment method is documentary credit.

In the same line of thought, there is a plethora of research (e.g. Kulaet al. 2015), which argue that the sales contract between applicants and beneficiaries is the main source of divergence. For instance, Kula et al., (2015) scrutinized the export letter of credit discrepancy rate in listed companies in the Istanbul Chamber of Companies. The results have shown that the typical

factor that contributes to documentary discrepancies appears to be the clauses in the sales contract.

## **6.2 Letter of Credit Application and Agreement**

At the outset of this stage the importer must fill up the application form of LC, and then instructing his bank to provide the exporter with the letter of credit. This relationship is mainly established through contracts between the issuing bank and its customers (Mugasha, 2003). In this regard, the main obligation of the issuing bank is to issue a letter of credit in accordance with the applicant's instructions. On the other hand, *"the applicant's main obligation to the issuing bank is to reimburse the bank and keep it indemnified in aspect of the amounts paid out due to the bank's establishment of the letter of credit or bank guarantee"* (Mugasha, 2003 p.99).

Ordinarily, the importer is responsible for providing simple and clear instructions and professional wording. However, when he provides incomplete, unclear instructions, the issuing bank usually asks for clarification. Indeed, *"Any error, omission or delay in lodging the application with the bank may frustrate the timely supply of goods"* (Bergami, 2011 p.146).

## **6.3 Issuance of the Letter of Credit**

When it is agreed to pay by letter of credit, an agreement (sale contract) must be reached between the buyer and the seller. The next step is that the buyer will instruct his bank to submit a letter of credit. Then it will be passed to the beneficiary via the correspondent bank (advisory bank) in the exporter's country (Sherlock and reuvid 2011, 345).

Nevertheless, in some cases, the advising bank might be a branch of the issuing bank in the exporter's country. In other cases the exporter can request its bank to be the advising bank, or the importer can choose one of its corresponding banks in the exporter's country.

## **6.4 Advising Letter of credit**

After receiving the letter of credit and ensuring that it looks authentic, the advising bank will then inform the seller that the credit has been issued by transmitting it to the seller.

Ordinarily, it's up to the advising bank to check the authenticity of the credit origin as well as the accompanying conditions (Mugasha, 2003). Such review will determine whether the



credit requirements are in line with those of the sales contract before credit is granted to the exporter (Hinkelman, 2012). Indeed, when the letter of credit requires the bank to add a confirmation in accordance with the exporter's instructions, the proposed bank's responsibility can be expanded.

Following this line of thought, it's always prominent to underline that advising the letter of credit is considered to be a mere step in the process of LC. Thus, the role of the advisory bank is limited to notifying the customer that an LC has been opened on his behalf. However, the responsibility of the advising bank could be expanded when an LC requests the bank to add its confirmation in accordance with the exporter's instructions.

## **6.5 Presentation and examination of documents**

Once the goods have been shipped, the exporter will receive the required documents from the carrier then he will arrange for the issuance of the other documents. All these documents will therefore be presented to the bank for examination.

In this respect, Baker, (2000) asserts that documents which are subject to the verification are not presented directly to the issuing bank but rather to the advisory of confirming bank in the exporter's country.

Holistically, the confirming bank and the advising bank may be the same institution. But, the advising bank does not automatically become a confirming bank and there is no condition for a confirming bank to be an advising bank (Obayemi and al. 2015).

Within this framework, the UCP 600 specifically provides the measures to be taken during document inspection and the degree to which documents can be accepted or rejected based on single differences. For this reason, the article 14(a) of UCP 600 stipulates that "*A nominated bank acting on its nomination, a confirming bank, if any, and the issuing bank must examine a presentation to determine, on the basis of the document alone, whether or not the documents appear on their face to constitute a complying presentation*".

## **6.6 Payment settlement**

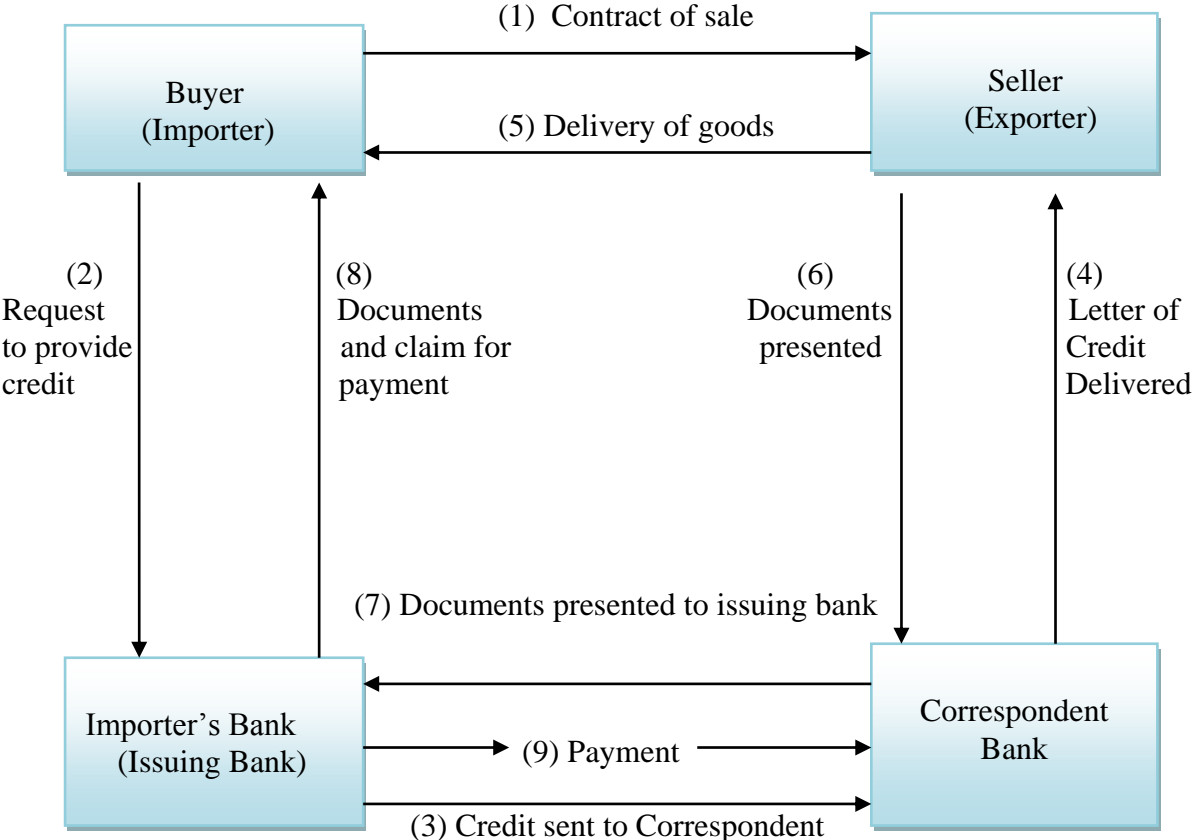
Payment is only triggered when the documents comply with the terms and conditions of the LC. Thus, in the case of confirmed letter of credit, once the documents match the underlying agreement, the confirming bank proceeds to the payment of the exporter. This means that exporters can even be paid before the issuing bank receives the documents. In such case, the confirming bank rolls out a direct obligation to pay the exporter and then, transmit documents

to the issuing bank for reimbursement (Mann, 2000). Otherwise, if the advisory bank has decided not to be primarily responsible for the LC, but only to hand it over the exporter, as authorized by the issuing bank without confirmation, an agency relationship is then established (Obayemi and al. 2015).

Kula et al. (2015) point out that there are always discrepancies that lead the issuing bank to refuse or request revisions of the documents submitted. As a result, payment can only be made after all conditions have been met.

The table below summarizes the process of documentary credit from the sales contract to the exporter's payment:

**Figure 2: Letter of Credit Diagram**



**Source: Rastogi (2012)**

## **7. Considerations when choosing a letter of credit**

The choice of payment method depends on several criteria such as security, acceptability by buyers/seller, cost and ease of use. As with all trade, there are some risks linked to the letter of credit that needs to be considered. These risks are summarized below:

### **7.1 Country risk (Political Risk)**

Political risk is defined as any impediment in the execution of the commercial contract that leads to the non-transfer of funds, the severance of relations or unexpected delay in receipt of funds. This risk often takes the form of political instability, civil war, mass riots, sovereign risk ....

*Country risk example: During the Libyan war in 2011, hundreds of exporters could not receive payments as the international community blocked Libyan government funds in major currencies such as US dollars and Euros.*

### **7.2 Fraud risk**

This risk arises when the beneficiary of LC prepares fake documents, which looks complying on their face to make the presentation to the issuing bank in order to obtain payment. It is also realized when the buyer issues a counterfeit L/C. in this case, the beneficiary never gets paid for the goods shipped.

*Fraud risk example: when the British steel giant was approaching bankruptcy when its business started, it had received funds under a letter of credit issued by Algeria through false documents*

### **7.3 Commercial risk**

This risk refers to the temporary or permanent financial inability of the importer to honor his commitment while respecting the agreed deadlines.

It can also arise when there is a dispute concerning the quality of the goods or the non-performance of any of the clauses of the contract, whether or not the dispute is well founded. The assessment of the risk differs between the two parties to the commercial contract.

#### **7.4 Risk of market disruption**

This risk occurs when the two countries of the contracting parties experience political conflicts which hinder the delivery of goods. Indeed, this financial risk is borne between the time the contract is signed and the time the “incoterms” obligations have been fulfilled.

#### **7.5 Economic risk**

This risk emerges when the cost of the raw material undergoes an unpredictable increase resulting in a variation in the price of the goods. In order to guard against this risk, the exporter must include a clause allowing for a price revaluation if not he will be obliged to honor his obligations even at a loss.

#### **7.6 Transfer risks:**

When exchanging currencies, the bank in the local country must have enough of each currency to make the exchange. Occasionally, banks in third world countries lack foreign currency. In this case, the bank will delay the payment until the foreign currency becomes available.

### **8. THE IMPACT OF COVID-19 ON TRADE FINANCE**

The effects of COVID-19 crisis on trade finance were enormous. Hence, organizations are struggling to survive the impact of this pandemic and are anxious to determine how they can survive during this turbulent time.

The health crisis has led to a change in behavior in order to reduce the risk of virus spreading convenience has suddenly become a question of reducing the points of technological and human contact.

During the pandemic period three trends have emerged:

#### **❖ Rise in cashless and contactless**

Social distancing measures have fuelled consumer fears about the transmission of the virus through the use of cash, leading them to switch from cash to cashless

### ❖ **Digitalization of customer relations**

The digitalization of customer relations is still a topical issue, especially in times of crisis. In fact, this new habit has just changed the customer relationship and in particular that of the customer with his bank. This translates into a sharp drop in branch traffic, a need for continuous, real time service availability and the ability to start or end operations at all existing points of contact. It is therefore important for banks to maintain a strong link with customers who want the same quality of service under all circumstances. Banks therefore need to achieve their transformation through an Omni-channel strategy that places the customer experience at its center.

### ❖ **Uphill of fraud**

The massification of telework and e-commerce has mechanically increased cyber threats. The risk of fraud has increased sharply during the period of pandemic. Indeed, this risk may be linked to the underlying transaction or in the documentary credit or due to false and forged documents.

## **9. CONCLUSION**

The banking system has always been confronted with risks that hinder its proper functioning in order to be profitable and maintain its soundness. The bank is in position to identify, evaluate and implement strategies to control and monitor all these risks.

Risk mapping is thus a fundamental instrument to managing operational risks by providing a global understanding of the risks. Its design requires the definition of a methodological framework for identifying and assessing risks.

# **CHAPTER TWO: METHODOLOGIE FOR MAPPING OPERATIONAL RISKS**

## **1. INTRODUCTION**

The continuous change in the financial environment and the metamorphosis of banking activity, notably the evolution of a balance sheet intermediation activity towards a market activity and off-balance sheet makes banking activity increasingly a source of risk.

The notion of risk management has become a central issue, now a fashionable subject and has also started to gain notoriety, following recurring disaster scenarios over time. Nevertheless, this subject is widely discussed in the literature; it is also the subject of much controversy.

Controlling operational risks is becoming a key aspect in the banking sector. Indeed, in order to improve reliability of business operation and to reduce losses caused by poorly- identified risks and to guarantee a better assessment of operational risks banks must introduce preventive measures upstream and protective measures downstream.

Admittedly, there are several risk management instruments, but risk mapping is an auxiliary tool that provides a broader and more effective understanding of risks, in other words, risk mapping provides more in-depth and creative management while going beyond the prudential dimension.

In order to better grasp this topic, we will first define the operational risk its specificities and typology. Then, we will present the regulatory framework for this risk in particular the Basel II agreements. Thereafter, we will conclude with the exposure of risk mapping.

## **2. DEFINITION, CHARACTERISTICS AND COMPONENTS OF OPERATIONAL RISK**

### **2.1 Definition of operational risk:**

Operational risk is non-financial risk that corresponds to all risks that do not originate in the bank's arrangements, but in its day-to day operations and management process.

Operational risk has been defined by the Basel Committee on banking supervision as *“The risk of direct and indirect losses resulting from the inadequacy of failure of internal systems, people or from external events”*.

The circular to credit institutions N°.2006-19 of 28 November 2006, relating to internal control, defined operational risk in article 45 as follows: *“Operational risk is defined as the risk of losses resulting from deficiencies or failures attributable to the design, organization and implementation of procedures, human or technical errors and external events, the definition includes, among other things, legal risk but excludes strategic and reputation risk”*

Danièle N. (2006) asserts that operational risks may take into account legal, administrative, technical or technological risks, such as risks related to information, management and procedural systems, and environmental risks, such as economic, political, systemic social, and climate risks. However, operational risk does not include strategic risk and reputation risk.

In this sense, Wharton (2002) defines operational risk as a non-financial risk, which has three sources: internal risks (such as rogue traders), external risks, that is any external events that cannot be controlled (such as terrorist attacks) and strategic risks (for example: price war).

Operational risk is ingrained in all services, activities and products and affects all employees of all companies (Thirlwell, 2011). In a similar way, Thirlwell (2010) argues that the load of additional capital does not allow banks to protect themselves from such risks because they cannot estimate the cost of fraud or natural disasters.

In the light of the aforesaid, Chappelle and al, (2005) proved that operational risk has features that distinguish it from the financial risks since it is strongly linked to internal process and endogenous to banking activity.

## **2.2 Characteristics of operational risks**

Compared with other bank risks, operational risks have many peculiarities. In fact, this risk is inseparably linked with almost all business activities. It is also considered as a specific risk because of its precise form which is strongly depends of the specific company profile. On the other hand, it is qualified as a cultural risk because dealing with such diverse and interconnected risks that are summarized in the treatment of operational risk is a matter of the company's risk culture.

Operational risk may arise in all sphere of a bank. However it is less frequent and very serious than other risks and its consequences can be catastrophic and there is no way to limit or trade operational risks (Thirlwell, 2010b). In addition, given its unpredictable nature, its financial impact cannot be limited or covered by hedging contracts.

Operational risk involves all activities and all employees of the bank, making no difference (Blunden and Thirlwell, 2010).In this regard, such risks are more difficult to manage and assess.

To emphasize, such risk is pervasive, complex and dynamic. Unlike credit and market risk, which usually occur in a specific business area, operational risk is present in all business processes.

### 2.3 Components of operational risk

#### ❖ **Process failure**

- **Process risk:** this risk is mainly due to poor process management, inappropriate processing of transaction and non-compliance with banking rules.
- **Risk of business and systems disruption:** this risk materializes when there is a malfunction in the systems that lead to the management of banking services
- **Accounting risk:** this risk is reflected in the bank's image. Thus, an erroneous accounting entry or one that does not comply with accounting standards may damage the bank's image.
- **Money laundering risk:** this occurs when a banking institution is directly or indirectly involved in the processing of money flows that are considered suspicious.

#### ❖ **Deficiency due to people**

- **Risk of fraud:** This risk is characterized by a loss which is essentially due to any unlawful act including deception, concealment or breach of trust. The purpose of persons involved in such a risk is to seek personal or commercial advantage.
- **Ethical risk:** This risk arises in the event of non-compliance with the bank's moral principles.
- **Risk of staff mismanagement:** these are losses due to acts that do not comply with the legislation in force or with agreements relating to employment.



❖ **A deficiency due to information system**

- **IT and information systems risk:** this risk is the result of a malfunction in a bank's information system or the absence of computer back-up to ensure application continuity in the event of an interruption.

❖ **Deficiency due to external events**

- **Legal risk:** this is the risk of any dispute with a counterparty resulting from any inaccuracy, deficiency or insufficiency of any nature whatsoever that may be attributable to the institution in respect of its operations.
- **Regulatory risk:** this risk translates into non-compliance with banking rules
- **Risk on customers, products and business practices:** It results in the fraudulent use of confidential customer information, dishonest trading on behalf of the bank and sale of unauthorized products.
- **Risk of damage to tangible assets:** this risk refers to the effect of a natural disaster that can destroy or damage a tangible asset.
- **Process execution, delivery and management:** for example, data entry, record errors, mortgage failures, program defects, lack of operational handling, configuration errors, failure to comply with legal or regulatory obligations.

### **3. THE PLACE OF OPERATIONAL RISKS IN PRUDENTIAL REGULATIONS**

In order to improve the management of banking risks and strengthen the soundness of the financial system, the Basel Committee initially introduced the credit risk (through the Cook Ratio established in 1988), and then focused on market and operational risk under the Basel II reform in 2004, and completely ignored systemic risk in the given moment. It was only after the subprime crises that this risk came to the fore. This is, along with the liquidity risk, the main innovation of the Basel III reform.

The Bale II agreements come to highlight operational risk in order to maintain the stability of the banking system. These rules imposed minimum capital requirements on banks to cover this type of risk. As far as operational risks are concerned, Basel III is just a continuation of the measures taken in the previous reforms, even if the new risk is as responsible as the

systemic risk or liquidity risk of the subprime crisis, the Basel agreement is far from putting operational risk at the core of its priorities

### 3.1 Typology of operational risk according to Basel Committee

The framework was revised in June 2004, commonly referred as Basel II, with the introduction of operational risk in addition to the existing credit risk and market risk. Under the Basel framework, operational risk includes legal risk but excludes strategic and reputational risk. In addition, Basel II provides three available methods to calculate capital charges for operational risk, including basic indicator approach, standardized approach, and advanced measurement approach.

The Basel committee has also adopted a classification that lists various risk events in seven categories:

- ❖ **Internal fraud.** For example, intentional misreporting of positions, employee theft, and insider trading on an employee's own account.
- ❖ **External fraud.** For example, robbery, forgery, cheque kiting, and damage from computer hacking.
- ❖ **Employment practices and workplace safety.** For example, workers compensation claims, violation of employee health and safety rules, organized labour activities, discrimination claims, and general liability.
- ❖ **Clients, products and business practices.** For example, fiduciary breaches, misuse of confidential customer information, improper trading activities on the bank's account, money laundering, and sale of unauthorized products.
- ❖ **Damage to physical assets.** For example, terrorism, vandalism, earthquakes, fires and floods.
- ❖ **Business disruption and system failures.** For example, hardware and software failures, telecommunication problems, and utility outages.

- ❖ **Execution, delivery and process management.** For example: data entry errors, collateral management failures, incomplete legal documentation, and unauthorized access given to client accounts, non-client counterparty misperformance, and vendor disputes.

These risk categories reflect all operational risks that may affect the activity of a banking institution. Therefore, a good strategy will be required to control these risks.

These different categories of events are determined according to a breakdown of the business lines of the banking activity proposed by the Basel Committee. These business lines may be modified according to the bank's different activities. The table below shows these business lines.

**Table 2: classification of trade lines**

Level 1	Level 2	Activities
Financial engineering	Business financing Financing of local authorities and public administrations Investment banking Advisory service	Mergers and acquisitions, commitments, privatizations, research, securisation, debt securities, shares, syndicated loans, IPO's, secondary market placement
Negotiation and sale	Sales Market-making Own-account positions Treasury	Fixed income, equities, foreign exchange, commodities, financing credit, securities on own positions, loans and repurchase agreements, brokerage, debt securities, prime brokerage
Retail Banking	Retail banking Private banking Cards	Loans/Deposits, Banking, trust, wealth management, investment advice, merchant/Commercial Cards, Corporate/Customer Cards
Wholesale Banking	Commercial banking	Project financing, real estate, exports, trade, leasing, loans, guarantees, and bills of exchange.
Payment and settlement	External clients	Payment and recoveries, transfers of funds, compensation and settlements.
Agent's function	Conservation Business agent service business	Deposits, certificates, securities, leading, corporate actions

	Trust service	Issuing or paying agent
Asset management	Discretionary portfolio management Non-discretionary portfolio management	Centralized, separate, retail, institutional, closed-end, open-end, private equity
Brokerage	Retail Brokerage	Execution and full service

**Source: Basel Committee on banking supervision**

### **3.2 Bale II agreement: the entry into the operational risk**

In order to strengthen the security of banking activities and to ensure effective risk management in a context of globalization, the Basel Committee proposes to explicitly cover risks other than credit and market risk in the new Accord. This proposal reflects the Committee's interest in making the New Basel Capital Agreement more risk sensitive and the realization that risks other than credit and market can be substantial.

In fact, The Basel Committee considers that a capital charge for other risks should involve a range of methods to accommodate the variations in industry risk measurement and management practices. Through extensive industry discussions, the Committee has learned that measurement techniques for operational risk, a subset of other risks, remain in an early development stage at most banks, but are advancing. As additional aspects of other risks remain very difficult to measure, the Committee is focusing the capital charge on operational risk and offering a range of methods for assessing capital against this risk. The purpose was to illustrate the risks actually incurred by the bank while defining a comprehensive framework for assessing banking risks.

Indeed, the work of Basel II has imposed an allocation of equity for operational risks since this risk was taken for the first time in the calculation of regulatory capital.

The Basel II agreement was concluded on 26 June 2004 in the European Union and through the CRD directive of 2006 and it's based on a range of objectives, among which the following are cited:

- To take into consideration new risk categories that have not been addressed before, such as operational risk, interest rate risk or liquidity risk.
- The minimum capital is insufficient to guarantee the solvency of a banking institution, hence, the implementation of qualitative requirements such as risk management.

- Optimizing the calculation of risks and the allocation of equity capital to cover the risks taken by banks.

The Basel II arrangement is based on three pillars described below:

**Pillar I: Capital requirements:** The table below summarizes the main changes concerning the calculation of solvency ratio.

**Table 3: Capital requirements: Basel I versus Basel II**

	<b>Bale I</b>	<b>Bale II</b>
<b>Equity ratio</b>		
<b>Risk calculation method</b>	Uniform calculation method	Choice between standard method and methods based on rating or internal measures (IRB Internal Based approach)
<b>Credit risk</b>	Standard method -Borrower categories: OECD government, bank, mortgage, and normal (companies, individuals, non-OECD countries). -respective weights: 0%, 20%, 50% et 100%.	Revised standard method - Categories of borrowers: Sovereigns (abandonment of the membership criterion), other public sector entities, multilateral development banks, corporations, retail, mortgage lending, high-risk, off-balance sheet. Weights (more differentiated according to risk): 0%, 20%, 40%, 50%, 75%, 100% or even 150%.
<b>Market risk</b>	Market risk measured by a standard approach or an internal model approach	No change in the calculation of market risk between Basel I and Basel II
<b>Operational risk</b>	Operational risk is not taken into account	Operational risk is measured by the Standard approach, the Basic indicator Approach or the advanced Approach

**Pillar II: The supervisory review process:** the authorities may impose individuals requirement greater that those calculated by the method proposed by the first pillar.

**Pillar III: Market discipline:** banking institutions are required to publish comprehensive information on the nature, volume and methods of managing their risks.

### **3.3 Determination of capital requirements**

Basel II has put in place more advanced and risk-sensitive capital requirement in order to ensure better risk control. Indeed, it has also developed three approaches to cover operational risks without imposing any of them. These three evolving approaches are envisaged in regulation in order of increasing complexity and risk sensitivity:

- **Basic indicator approach**

It is considered to be the simplest approach since it does not require any eligibility criteria for its use, thus allowing a flat rate of 15% to be applied to net banking income for the last three financial years.

- **Standard approach**

This method is considered to be a finer extension of the basic indicator approach. However, it does not use a single coefficient on total bank income. Indeed, this approach allows several coefficients in the allocation, which is by type of activity.

The capital requirement will be calculated by multiplying the gross product by a (Beta) factor specific to each category.

It is a flat-rate approach in which banks' activities are divided into eight categories: corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency functions, asset management and retail brokerage.

This approach takes into consideration the nature of the risk associated with each activity according to the breakdown illustrated by the Basel Committee. The following table details the coefficients for each business line:

**Table 4: Typology of business lines**

Business lines	Coefficient $\beta_i$ (%)
Business financing	18%
Institutional trading and sales	18%
Payment and settlement	18%
Agency service	15%
Commercial banking	15%
Asset management	12%
Retail brokerage	12%
Retail banking	12%

**(Source Basel Committee on Banking Supervision, 2002, p.113)**

**- Advanced measurement approach**

It is a complex measurement approach that allows banks to calculate the capital requirement while relying on an internal model determined by the bank and validated by the supervisory authority.

This method reflects the superiority of banks in terms of information. Thus, the measurement system to be determined must use both qualitative and quantitative data. In addition, the choice granted to banks for the use of several components in the advanced methods ensures differentiation between banks in terms of operational risks.

As part of the latter approach the choice of models will be determined on the basis of three parameters, namely volume, the nature of activities handled and quantification. Indeed, the implementation of such an approach for a bank corresponds to its control of its internal processes.

The Basel committee encourages the major banking institutions to gradually opt for the AMA approach in order to strengthen the stability of the financial system. As such, previous studies have reported that this approach has the advantage of being preventive (Jimenez and Merlier, 2004). On the other hand, it is in the best position to develop a culture of operational risk (Ospital, 2006).

**Table 5: Synthesis of different approaches to operational risk management**

Basic indicator approach	Standard approach	Advanced measurement approach
-% of net banking income - No eligibility criteria	-Eligibility criteria: effective involvement Deliberative and executive body, sufficient resources, a risk monitoring system. -an operational risk manager appointed - communication of risk monitoring indicators internal and external audit of the system	-Standard approach criteria - specific criteria: Daily reporting on the operational risk manager Collection of losses with history > 5 year Risk assessment and self-assessment Monitoring indicators Scenario analysis Regulatory capital Taking insurance into account



The more complex the operations are, the more risk sensitivity must be increased

### **3.4 OPERATIONAL RISK MANAGEMENT IN TUNISIAN REGULATIONS**

Like credit and market risk, operational risk requires a special management and monitoring system in order to maximize the value of the bank.

At the outset, it is useful to review that operational risk management is part of an internal control approach, which is responsible for controlling the bank's operations and internal procedures. Thereupon, the Tunisian regulatory has granted an important place to this aspect through various regulatory texts.

The issue of internal control has been largely addressed through general accounting standards, which require organizational discipline and risk assessment.

Thus, the implementation of these standards and procedures has facilitated the control process and the collection of relevant information, and allowing for continuous monitoring.



According to article 3 of the circular 2006-06 required banks to have compliance monitoring system which consists of fundamental principles, procedures and mechanisms that aim to ensure that the banking institution complies with the law and regulations in force.

The circular to credit institutions 2006-19 of the central bank of Tunisia defines the internal control system as *“the set of process, methods and measures aimed at permanently ensuring the security, effectiveness and efficiency of operations, the protection of the assets of the credit institution or the non-resident bank, the reliability of financial information and the compliance of these operations with the laws and regulations in force”*

Following this line of thought, the circular 2006-19 required banks to implement a system for monitoring, measuring and managing credit risk, market risk, liquidity risk and **operational risk.**

Admittedly, the circular 2006-19 has made improvements in terms of risk management, but it has been criticized for not specifying the components and systems of operational risk management and for the lack of mandatory reporting.

In order to improve banking governance, the central bank has introduced the circular 2011-06 which is firmly grounded on four pillars closely linked to risk management, particularly operational risk management (the board of directors, committees, appointment and remuneration and communication policy). These pillars enable banks to ensure prudent management to protect the interest of shareholders depositors and staff, and to guarantee the sustainability of the bank institution.

## **4. CONCEPTUAL FRAMEWORK FOR RISK MAPPING**

### **4.1 Definition**

The risk mapping can be defined as a powerful tool for internal steering and management support. Its development therefore requires a meticulous method for systematically detecting risks. Indeed, this device has a pivotal role in identifying major risks within the organization and presenting them hierarchically in a global manner.

This prioritization is based on the following conditions:

- The potential impact
- The probability of occurrence
- The current level of risk control

The issue of risk mapping has received considerable critical attention. Actually, several authors and professional groups have defined risk mapping. The multitude of definitions relating to this term revolves around the same objective.

As a matter of fact, according to IFACI ‘‘ *mapping is a graphical representation of the probability of occurrence and impact of one or more risks. Risks are represented in such a way as to identify the most significant risks (highest probability and /or impact) and the least significant risks (lowest probability and/or impact)*’’

F. Moreau (2002) asserts that ‘‘The essential product of the overall risk management process, which must be based on an organization that enables this mapping to be regularly and effectively updated in line with changes in the context and the company’s activities and to apply the necessary risk profile transformation actions.

Generally speaking, risk mapping is a steering and decision- making tool in terms of risk management.

The risk mapping can also be defined as follows: ‘‘*risk mapping is the structured representation of a set of identified and quantified risks within a given perimeter. It is a visual tool whose purpose is to give the reader an immediate picture of situation*<sup>9</sup>.

Studies of Bernard and al. (2008) show the importance of risk mapping but from another angle. Thus, for them ‘‘Mapping is a living management tool: it should make it possible to regularly measure the entity’s progress in its level of risk control ‘‘

These definitions show that risk mapping is an important part of the risk management process based on a risk taxonomy that enables an analysis of the dimensions of the inherent risks (impact and frequency of occurrence). Its evolutionary nature makes it a factor of stability within the organization.

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<sup>9</sup>Jean le ray, « organiser une démarche de cartographie des risques », AFNOR, 2008, P08

## **4.2 The features of risk mapping**

To sum up the main findings of the above-mentioned studies risk mapping is seen as a tool for risk management, optimal resource allocation and communication.

### **❖ Device of risk management:**

The risk map leads the company to improve existing internal controls and implement new controls and actions plans, so that is possible to control the risks inherent in its activities. Therefore, it supports the management of company activities and operations.

In this line, we can describe it as the first stage of ERM (Enterprise Risk Management), or the first stage of the risk management process for companies without formal ERM (Ingram, 2004:1).

### **❖ Optimal resource allocation tool**

Establishing action plans and controls requires a cost/benefit ratio to be put in place (Sonigo and al, 2004:4). Indeed, the purpose of risk mapping is to avoid wasting resources, so that there will be an optimal allocation of resources according to the priority of activities and their risk profile (Belluz, 2002: 6).

### **❖ Communication tool**

Risk mapping is not only a communication tool for managers and the head office, moreover it is known as an information and decision making device (Renard, 2004: 148). Therefore, under this view, managers align the management of their activities with it. Actually, the risk map enables the executive board and the senior management to develop a risk policy involving the entire organization.

## **4.3 Motivation for setting up risk mapping**

There are specific reasons why a bank may choose to use risk mapping instead of any other risk management tool, including the following:

### **❖ The audit plan**

Risk mapping ensures risk management by identifying priority areas for action. Therefore, it serves as a basis for the programming of audit missions by comparing the opinions of

operational staff and the audit department and makes it possible to rationalize the audit department's approach.

❖ **A risk analysis reference system**

Risk mapping can be the subject of a risk reference framework. It is therefore a fundamental pillar since it provides proof at the risk management approach.

❖ **Risk communication**

Risk mapping is a means of internal communication within the organization used to control the evolution of major risks in order to implement the necessary preventive actions. In addition, this tool plays a crucial role while reassuring all stakeholders (state, insurance, auditor, financial market) of the company's ability to honor its commitments.

❖ **Banking regulation**

Risk mapping is an essential step in risk management. In fact, this tool enables the implementation of risk assessment methods. By proceeding in this way banks may build up regulatory capital to cover their banking risks.

#### **4.4 Types of risk mapping**

Before setting up a risk map, it is useful to define its type. Mareschal (2003) indicates that there are two types of risk mapping. Global mapping and thematic mapping. Besides, the choice of mapping type is aligned with the objectives of the study, the size of the bank and its business portfolio.

❖ **Global mapping**

Global risk mapping aims to identify, quantify and map all of an organization's risks, all subjects combined<sup>10</sup>. It refers to a set of thematic maps and it aims to publish a global overview of the major risks within the organization concerned.

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<sup>10</sup>G. de Mareschal, op.cit., p23.

### ❖ **Thematic mapping**

It is a means of identifying and classifying risks related to a specific theme.

- Either a different organization ( for example: different banks or departments) for the same risk theme ( for example: operational risk)
- Either different areas of risk related to the theme studied for the same organization

Thematic mapping is seen as the first step towards global mapping

## **4.5 The Objectives of the risk mapping**

The establishment of risk maps may be motivated by different goals that are equally important to each other. These goals are as follows:

- Implement internal control or appropriate risk management procedures;
- Assist the management to formulate strategic plans and decision-making;
- Guide the internal audit plan by highlighting the main risk concentration process;
- Ensure the correct image of the organization

## **4.6 Risk Mapping Development Approaches**

The methods of cartography development are diverse and depend on the activities and goals that the organization assigns to cartography. There are three methods for developing risk mapping, namely:

### ❖ **The Bottom-up Approach**

This so-called bottom-up approach relies on the identification of risks by operations that are more involved in the processes. These risks are then communicated to management (audit or risk manager), whose task is to determine the importance and control policy for each of them. For MARESCHAL, it is therefore a question of raising the risks from the ground to the people in charge of the development of the mapping.

The steps of the bottom up approach:

1. Business process modeling (with operations)
2. Identification of inherent risks (with operational staff)
3. Residual risk assessment and identification of major (operational) risks
4. Identification of Strategy Risks (with Strategy Director)
5. Mix of Major and Strategic Risks (GM and Key Executives)

## 6. Risk and Opportunity Portfolio Management

### 7. Steering and Communication

-Gilbert de Mareschal, La cartographie des risques.AFNOR- Ed.2003

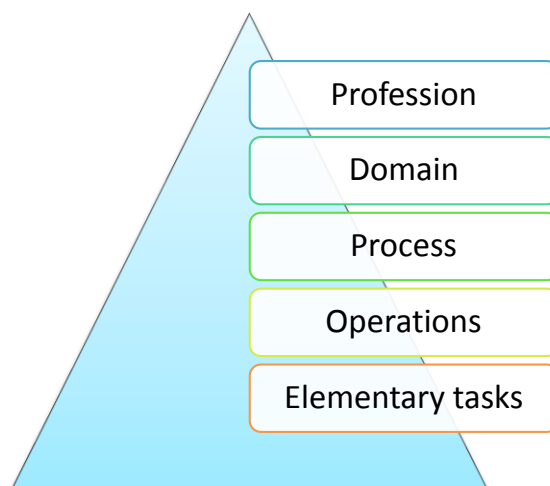
#### ❖ The Top-down Approach

Top down, as the name suggests, it goes from top to bottom; presents itself as the inverse of the first. It is the hierarchy (audit or risk manager) that detects risks and presents them for the opinion of operational staff. This approach improves the decision-making process and fosters a risk culture in the organization that is conducive to continuous improvement of the process through senior leadership.

Steps of the top-down approach:

1. Identify the main risks of stakeholders
2. Weigh the main risks to keep only the most important risks
3. Associate key business processes with operational risks and risks Considerable
4. Prioritize risk
5. Establish a risk map (interview with the main person in charge)
6. Verify risk (performed by key management personnel)
7. Include in the audit plan

**Figure 3: Identification through the “Top-down Approach”**



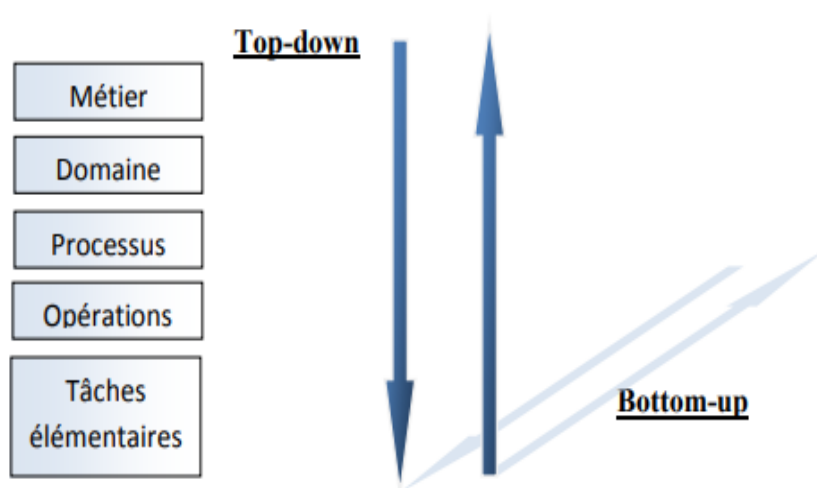
Source: Cabinet Opti-Décision

### ❖ The combined approach

This method associates bottom-up and top-down methods. Compared with the previous two methods, it is considered the most effective. Likewise, under this method, risk identification is carried out by the hierarchical structure and the operators in parallel, so it can provide a fairly complete and detailed basis for the risks considered. The top-down and bottom-up approaches have become particularly complementary to ensure a pragmatic measurement of operational risk.

The top-down and bottom-up methods can be expressed as follows:

**Figure 4: schematic representation of top-down and bottom-up approaches**



*Source: IFACI 2006*

### ❖ The Benchmarking Approach

It is an approach to business management, to collect best practices in identifying and managing risk also it enables internal audit to take into account general risk concepts.

## 4.7 Methodology for setting up a mapping of operational risks

As a tool for monitoring and measuring operational risks, risk mapping is increasingly becoming a valuable management instrument. However, it is worth mentioning that there is no single, ideal and rigorous method that can be adapted to all companies (Renard, 2002).

In order to gather a better understanding of this concept, we can identify three essential phases in each approach namely: the preparation phase, the design phase and the post-mapping phase.

### **4.7.1 The preparation phase**

At this stage, it is necessary to have a global understanding of the entity through the analysis of its activities; this work is completed by the implementation of risk terminology.

This first step makes it possible to define a risk nomenclature in order to split the organization into processes, thus enabling better identification of the risk associated with its various processes.

According to Moreau (2003), De Marschal (2003), this phase includes:

- The constitution of a quality team for the works
- The preparation of the funds necessary to carry out this work
- The definition of the mapping perimeter
- The choice of a risk typology
- The choice of the approach to designing the cartography
- Analysis of the context of the study and setting of objectives

With this first framework in place, a literature search on best practices in risk management should be carried out with the aim of dividing the activities according to process logic. This approach will make it possible to subsequently apprehend the various activities from a risk perspective. According to this line of thought, a risk corresponds to the following sequence: a cause, an event, and consequences.

In light of the aforesaid, Renard (2009) states that the purpose of dividing the organization into processes is to identify the main risk areas, this facilitates the introduction of the internal control questionnaire.

### **4.7.2 The conception phase**

This is the most important step in the risk mapping process as its implementation will depend on all risk management decisions.

#### **4.7.2.1 Identification of operational risks**

The purpose of this step is to determine the type of risk that the organization faces during its activities. Indeed, it's not a question of reducing the theoretical types of risks faced by the organization, but of making a precise inventory in order to determine the specific risks for the



organizations in a detailed and documented manner. Therefore, in addition, to having an understanding of the organizations involved and the roles assigned, an exhaustive list of the risks inherent to the activities also requires a fine grasp of the implementation process.

In this respect, Jiménez & al (2008) show that this step consists of identifying all the risk events that may occur during the process and that may affect its progress.

According to Barthelemy & Courreges (2004), there is no flawless method, only the experience and humility of managers are guaranteed for the identification of risks.

By identifying the risks banks should consider several factors in order to establish the risk profile of an institution and its activities, for example:

Types of customers, activities, products,

Design, implementation and effectiveness of processes and systems,

Risk culture and risk tolerance of a company,

Personnel policy and development, and

Environment of the company.

By identifying risk sources and risk drivers, a sound “health check” in line with the saying that “prevention is better than cure” allows a credit institution to take preventive measures.

#### ❖ **Risk identification method**

In order to draw up a list of all the risks inherent in the various sectors of the organization, this work involves the use of identification methods so that a repertory of risks inherent to each chopper unit can be defined. In the following, we mentioned some techniques for identifying risks.

##### **- Identification based on check-list**

This includes the identification of operational risk on the basis of a predetermined list of risks. These risks are then analyzed to link them to the entity’s processes.

##### **- Identification based on the achievement of objectives**

This technique consists of identifying the risks that may threaten the achievement of the organization’s predefined objectives.

- **Identification through historical analysis**

This method aims to make an inventory of the operational risks that materialized prior to the mapping being drawn up. *This method is not recommended, as the risks identified may not be current. Indeed, these risks may have disappeared either by the fact that they have been dealt with, or by the cessation of the activity that gave rise to them.*<sup>11</sup>

- **Scenario-based identification**

The aim here is to identify the risks by relying on the opinions of experts or external databases. In fact, for Ellenberger (2004), this technique uses primary events as the starting point for establishing a scenario of events that are feared to generate risk

- **Identification based on environmental analysis**

In order to ensure its sustainability, the organization must anticipate the potential risks related to the future evolution of the internal and external environment. However, the identification of risks through this method remains unrealistic.

#### **4.7.2.2 Risk identification tools**

The identification of risks implies the implementation of an adequate tool whose role is to collect risk data. Among the identification tools we can distinguish:

- **The interview**

This is a qualitative method of data collection. The objective for the interviewer is to set up a detailed description of the mechanism in order to identify the risk inherent in the processes and the associated controls.

- **The questionnaire**

This method is based on a set of questions asked in a specific order. In particular, *it makes it possible to obtain information relating to the execution of tasks and, as a result, to identify malfunctions and to identify those that are misunderstood by the performers*<sup>12</sup>.

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<sup>11</sup> COSO II, ‘‘ guide sur la surveillance permanente des Systems de contrôle interne ‘’, 2009, P67

<sup>12</sup> MADRES Henri-Pierre & Jean-Luc MASSELIN, ‘‘contrôle interne des risques’’, édition d’organisation, 2009,

- **Risk identification tables**

The specific feature of this table is that it provides a summary assessment of the risks inherent in the task as well as the control mechanisms put in place to cover them, as shown in the table below.

**Table 6: Risk identification table**

Tasks	Objectives	Risks	Evaluation	Internal control system	Findings

**Source: Renard (2010)**

**4.7.2.3 Inherent risk assessment**

Risk assessment is crucial step in risk mapping as it quantifies the dimensions of each risk. It is a question of assessing the organization's exposure to the universe of risks in a raw way, without a risk control system. To do this, a combination of three factors will be required:

- The probability of occurrence, of frequency;
- Effects, or severity;
- The length of time that the consequences of the event have an impact

Ingram (2004) and Moreau (2000), state that there are key parameters that must be taken into consideration such as the company's expertise, its experience in the field of activity, the information system, the staff culture as well as the evolution of the environment.

Usually this step requires the determination of probability and impact of each identified risk it is also based on objective thinking and input of those who are most familiar with the areas affected by the possible risks

The assessment of operational risks is carried out using two methods, namely quantitative and qualitative estimation.

- **Quantitative technique**

The quantitative estimation of risks takes into consideration the history of financial and operating losses. Actually, this method reflects an effective probability over a defined period of time. It therefore requires the existence of relevant data to estimate the probability of occurrence and the gravity of risks from both internal and external sources (Landwell, 2005).

- **Qualitative technique**

It is an estimation in which the probability and magnitude of the consequences are expressed in qualitative terms. It is less credible and considered subjective because it is based on subjective views (Landwell & al, 2005).

This estimation approach is used in cases where:

- Risk are difficult to quantify ;
- The statistical data needed for a quantitative estimate are insufficient ;
- Collecting and analyzing this data is not profitable in view of the expected benefit ;

In order to obtain an effective and relevant evaluation, it is necessary to ensure that the predefined methods are in line with the objective assigned to the mapping process.

This step aims to determine the ‘‘Inherent’’ risks to which the organization is exposed as a result of its activities. Actually, the level of vulnerability of the organization for each risk is assessed by using two types of indicators:

- The probability of occurrence
- The coefficient applied to factors considered aggravating

Assessing the probability of risk occurrence (Frequency of occurrence) is a key aspect in the evaluation phase. In order to evaluate this probability, we propose an iterative approach that allows a frequency to be associated with each process/risk pair.

The following table is a rating scale that can be adapted to the specificities of the bank:

**Table 7: Risk impact rating scale**

Quotation	Frequency	Measuring elements
1	Exceptional	Near-zero occurrence (<1%) over 2 years
2	Rare	Possible, but unlikely occurrence (1 to 10%) over 2 years
3	Probable	Occurrence plausible (10 to 50%) over 2 years
4	Very likely	Highly probable occurrence (>50%) over 2 years

**Source: IFACI<sup>13</sup>**

<sup>13</sup> IFACI. Groupe Professionnel Assurance, la cartographie des risques. 2<sup>ème</sup> édition, Paris, ‘‘ cahier de recherche ’’, 2013, 136p, page 36

The assessment of the impact of the risk is determined by the severity of its consequences on the organization. According to IFACI, this impact can be classified into three categories:

<b>Financial impact</b>	<b>Legal impact</b>	<b>Impact on image</b>
Rising costs	Civil and or/legal responsibility	Image degradation
Financial loss	Legal or professional sanctions	Reputation called into question
Decreasing in revenues		

**Source: IFACI**

The product of the probability and impact of risks gives the Inherent risk. This is the overall risk assessment.

**Inherent Risk = Likelihood \* Impact**

**4.7.2.4 Prioritization of inherent risk**

This step aim to make a classification according to a score attributed to each risk in order to facilitate the treatment task.

This score is obtained by multiplying the two dimensions (probability and gravity). Indeed, the hierarchy of risks must be constructed using scales defined in the evaluation stage.

In order to gather a better understanding of this step Jokung (2008), asserts that the ranking is established by following the value of the evaluation parameters, at this stage he proposes a methodology of three cases:

- Frequency and gravity are high; the risk is qualified as major. It calls into question the company’s objectives;
- Occurrence and gravity are low, the risk is qualified as minor, it does not jeopardize the company’s objectives;
- The two evaluation parameters are not simultaneously high or simultaneously low, the risk is qualified as intermediate. It may call into question the achievement of objectives.

Once the risks have been ranked in order of importance, the next step is to improve this ranking. This is done by assessing the internal controls that have already been predefined in order to reduce the effects of these different risks as much as possible.

#### **4.7.2.5 The identification and assessment of existing internal controls**

Internal control is a set of adequate and relevant measures to mitigate risk. The implementation of this tool requires the involvement and accountability of all the actors in the organization. It is the most reliable and relevant tool for risk management.

In fact, according to the Basel committee ‘‘ *internal control is a process implemented by the board of directors, senior management and all levels of staff, it is not simply a procedure or policy applied at a certain point in time, but rather a system that operates continuously at all levels of the bank* ‘‘

At this stage it is useful to highlight all the controls that have been put in place to mitigate the negative consequences of risks before designing risk map. In fact, it is a list of these controls that is as detailed and precise as possible. In a similar way, it is important to define the objectives of these controls (prevention, detection, or correction), the inherent risks, their mode of operation, the department (or person in charge) responsible for their implementation, their monitoring, key factors, success and performance indicators.

Thus, among the criteria for evaluating internal controls are the following:

- Effectiveness: the capacity of control to play its full role and achieve the results for which it is implemented
- Relevance: the usefulness of control. The focus is on the cost/utility ratio;
- Reliability : the ability of the control to function properly on the permanent basis;
- The quality of design and implementation
- The efficiency: it is questioning of reconciliation the three criteria of cost, performance and time to achieve results.

The assessment of inherent risks and internal controls is an unavoidable procedure whose role is to evaluate and rank the residual risks on which all risk management strategies will be applied.

#### **4.7.2.6 Residual risk assessment**

Ordinarily, it is fundamental to recall that residual risks are the risks that remain even after the application of control procedures. Thereby, assessing these types of risk requires the combination of inherent risk assessment and internal controls.

To this end, IFACI (2003: 10) has proposed a valuation approach based on the following formula:

$$\text{Residual risk} = \text{Residual impact} * \text{Residual probability} = (\text{inherent impact} * \text{inherent probability}) / \text{Evaluation of internal control}$$

Scoring is qualified as a tool for classifying residual risks. For this purpose, it is mandatory to take into consideration the organization's risk tolerance threshold defined at the level of the reference framework. This approach leads to the establishment of a ranking of residual risks by priority of action.

The residual risk assessment is an essential step to maintain effective and efficient risk management. It is regarded as a barometer for determining how well the risk management plan is designed. Otherwise, if monitoring and control indicate that some risks are not mitigated or avoided as expected, then an adjustment can be made to the response plan.

#### **4.7.2.7 Prioritization of residual risks and preparation of risk mapping**

The implementation of the risk matrix allows both the materialization and the classification of the residual risks determined in the previous step.

In this sense, Matte (2003) describes the risk matrix as the image of an organization's risks at a given time. In other words the risk matrix may be defined as a tool used to illustrate the ranking of risks based on an assessment of their likelihood and impact.

The risk matrix is a tool that stands out from the others due to its simplicity of management as well as its great power of visual communication

The work carried out by Jiménez (2008) and Bapst (2003), indicate that the risks likely to have an impact on the achievement of objectives are grouped in a table along two axes: impact and probability of occurrence of the risk. The risk matrix can thus be presented on the basis of a scale of 3 to 10 intervals depending on what the entity wants to put in place, the time allocated for development and the complexity of the process studied.

The matrix below presents an evaluation matrix with four intervals (4X4).

**Table 8: Residual risk assessment matrix**

Probability of occurrence	Frequent	Serious	Serious	High	High
	Probable	Low	Moderated	Serious	High
	Possible	Low	Moderated	Moderated	Serious
	Unlikely	Low	Low	Low	Moderated
		Negligible	Marginal	Critical	Catastrophic
	<b>Severity of consequences</b>				

**Source: Bonnal & al (2006:6)**

Once the risk areas have been classified and assessed and all possible scenarios have been exposed. At this stage, it is recommended that corrective measures be formulated with the objective of preventing and limiting the risks.

### **4.7.3 The post-mapping phase**

#### **4.7.3.1 The implementation of an action plan**

The action plan can be defined as consolidated assessments. This plan acts as a guide for senior managers and will enable them to take appropriate action.

As a matter of fact, this process should also identify the necessary actions, as those responsible for implementation this will help to strengthen the commitment of stakeholders in order to achieve the most productive results.

This step is important because it dictates how the most significant risks will be managed. In order to succeed in this step, it will be necessary to take into account the risk/return relationship, the correlation with other risks, as well as the coherence with the administration's strategy and its risk tolerance with the administration's strategy and its risk tolerance level. The objective here is to achieve a balance between applying risk management techniques and monitoring the main risks indicators within the organization.

The action plan is used to assess all risks by using a range of risk management, communication and information procedures.



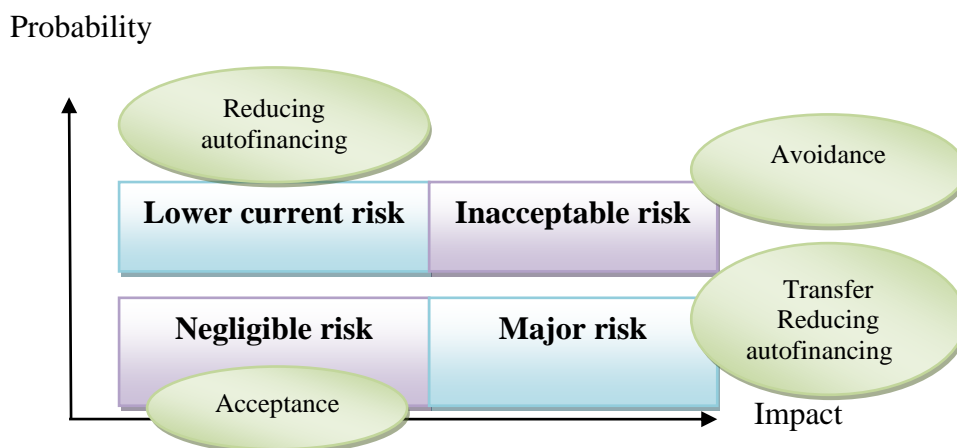
### ❖ Risks treatment

The treatment of risks implies the use of several methods depending on the characteristics of the risk faced by the organization. Among these methods we distinguish:

- **Acceptance:** consists of approving the risk without taking any action to change the probability of occurrence or impact.
- **The transfer:** this involves transferring the risk to another entity (insurance company, subcontracting of risk activity) in order to share the costs related to the risk.
- **Avoidance:** it is a question of avoiding the activity behind the appearance of risks. this technique is useful when the treatment of the risk is costly in terms of the benefits brought by this activity
- **Mitigation:** this last option consists in mitigating the risk by relying on a set of preventive and protective measures.

The figure below represents an action plan according to the result of the mapping of residual risks:

**Figure 5: action plan according to the result of residual risk mapping**



**Source: OTC Conseil<sup>14</sup>.**

#### 4.7.3.2 Communicating risk mapping

One of the objectives of modern risk management is internal and external risk transparency. Thus, the achievement of this objective implies the use of Open, target-oriented communication with rapid and reliable information and reporting.

<sup>14</sup> OTC Conseil, lettre n 42 avril 2010.

*The purpose of risk communication or reporting is to inform all stakeholders with information on residual risks and the action plans carried out. It thus consists of providing synthetic and precise information on the basic determinants of risk management<sup>15</sup>.*

In the same way, Risk mapping communication consists of providing information in the form of a dashboard. However, this communication aims to inform all parties, whether inside or outside the organization.

- **Communicating risk mapping internally**

In this context, internal reporting is intended to target process managers who need an alert and prevention tool to avoid risky situations. It is a tool for dialogue since it helps managers in decision making.

- **Communicating risk mapping externally**

Risk mapping represents a means of reporting that provides appropriate and homogeneous information that serves as an informational basis for all stakeholders.

#### **4.7.3.3 The follow-up phase**

This step has just completed the evaluation phase. Indeed, risk monitoring allows management to be informed of any changes in the residual risks identified and the appearance of new risks with a view to improving the risk policy. In fact, it is during this phase that the adequacy between the risks and the controls put in place can be ensured.

#### **4.7.3.4 Mapping update**

Risk mapping reflects the state of risks at given moments, and for this reason, periodic reviews are evident in order to be able to maintain a good understanding of the system and take into account the organization, the system, the technological evolution,.. Otherwise, it will indicate an outdated statement of the state of the bank.

It is generally recommended to use a period of 12 to 24 months to avoid excessive mobilization of the operators when identifying risks and to follow the risk mapping in a satisfactory manner.

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<sup>15</sup>KERBEL Pascal, « mise en œuvre d'un contrôle interne efficace », Edition AFNOR, 2007, p45.

## **5. CONCLUSION**

Through the development of this chapter we have assimilated that risk mapping is a determining factor in the control of operational risks. Indeed, targeted use of this tool will enable banks to improve the effectiveness of the risk management operations. In a similar way, it can strengthen the decision-making process where risks are involved.

To summarize, risk mapping represents an essential step for every organization that is looking to avoid potentially damaging issues.

# CHAPTER THREE: DEVELOPMENT OF A MAPPING OF OPERATIONAL RISKS RELATED TO THE DOCUMENTARY CREDIT PROCESS

## 1. INTRODUCTION

The sustainability and soundness of the banking system necessarily implies effective risk management. In fact, risk management is a determinant factor in the banking business and corner stone of good corporate governance.

Actually, risk management refers to the practice of forecasting the potential risks then analyzing and evaluating those risks and taking some corrective measures to mitigate them.

As part of our work, we will proceed to drawn up a mapping of the operational risks linked to the documentary credit process within TSB. The objective of this mapping is to enable managers to have a view of the risks incurred at any given time, while trying to propose appropriate actions to curb these risks

For this end, we divide our chapter into five main sections. In the first section, we present the general context of work; in the second section we describe the work methodology, in the third section we develop the preparation phase by identifying operational risks, in the fourth section we outline the design phase. The last section is dedicated to data analysis and action plan.

## 2. THE GENERAL CONTEXT OF WORK

### 2.1 The Tunisian Saudi Bank (TSB) in brief<sup>16</sup>

**Business Name:** TUNISIAN SAUDI BANK

**Date of Incorporation:** 30th May 1981

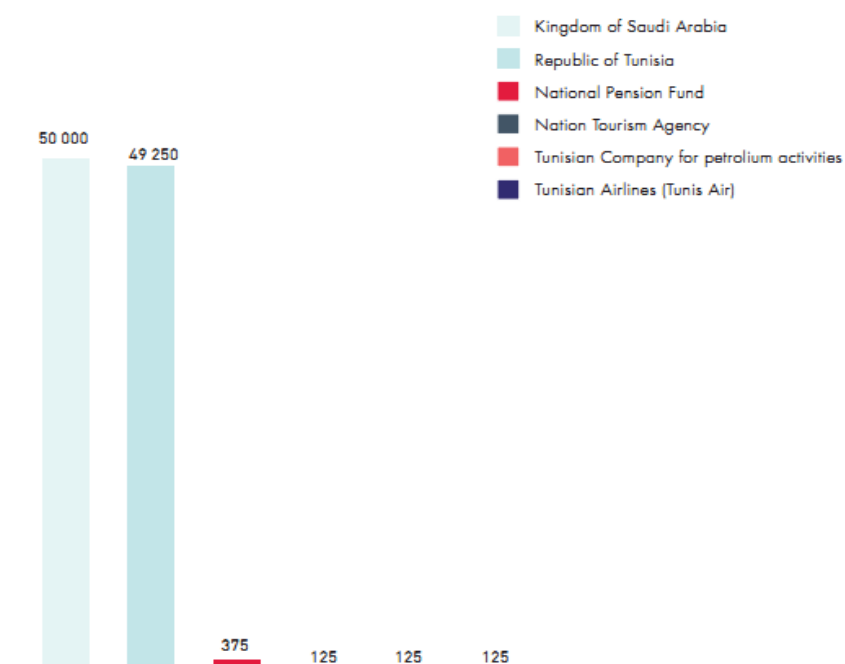
**Scope:** A universal bank authorized on 25 April 2005 to carry out diversified banking activities

**Corporate Capital:** 100 Million Dinars

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<sup>16</sup>Annual report 2018.

**Figure 6: Breakdown of share capital**



## 2.2 TSB's activity and performance indicators<sup>17</sup>

### 2.2.1 The bank's financial resources

As at December 31st 2018, the financial resources of the TSB BANK amounted to 671, 4 MD against 670 M.D on December 31st 2017,

**Table 9: Financial resources of the TSB**

In MD

	2017	2018
Stockholders Equity	140,6	140,8
Foreign loans	0,1	7,1
Other loans	41,9	10,5
Customer Deposits	487,4	513,0
<b>Total</b>	<b>670,0</b>	<b>671,4</b>

<sup>17</sup>Annual report 2018

### 2.2.1.1 Foreign Loans

Foreign loans Outstanding granted to the TSB from 31/12/2017 to 31/12/2018 remained relatively stable. Foreign loans are broken down as follows:

**Table 10: Foreign Loans of TSB**

Credit Lines	2017		2018	
	Amount (M.D)	Share (%)	Amount (M.D)	Share (%)
Italian Credit Line	0,119	100,0	0,06	1
Loans from the the Guarantee Fund for Bank Deposits	-	-	7,04	99,0
<b>Total</b>	<b>0,119</b>	<b>100,0</b>	<b>7,1</b>	<b>100</b>

### 2.2.1.2 Other Loans Outstanding

The amounts of other loans obtained by the TSB BANK on the money market reached, as at 31 December 2018, to 10,5 MD against 41,9 MD at 31 December 2017.

### 2.2.1.3 Customer Deposits

As at 31 December 2018, customer deposits totaled 513 MD, compared to 487, 4 MD a year earlier, an increase of 26 MD or 5,2%.

**Table 11: Customer deposits**

In M.D

	2017	2018	Variations	
			In M.D	in %
Sight Deposits	160 874	167 601	6 727	4,2
Term Deposits	258 518	267 732	9 214	3,6
(among which deposit certificates)	65 679	22 000	-43 679	-66,5
Savings Deposits	62 580	70 587	8 007	12,8
Other Deposits	5 437	7 059	1 622	29,8
<b>Total</b>	<b>487 409</b>	<b>512 979</b>	<b>25 570</b>	<b>5,2</b>
(among which deposits in foreign currencies)	29 321	37 217	7 896	26,9

## 2.2.2 The bank’s interventions

### 2.2.2.1 Credit and Shareholdings Activity

In 2018, in relation to all forms of medium and long-term lending activity, The Bank’s interventions in terms of approvals and commitments evolved at a slower pace than loans by withdrawals. With the exception of commitments by signature, the Bank’s interventions are broken down as follows:

**Table 12: The bank’s interventions**

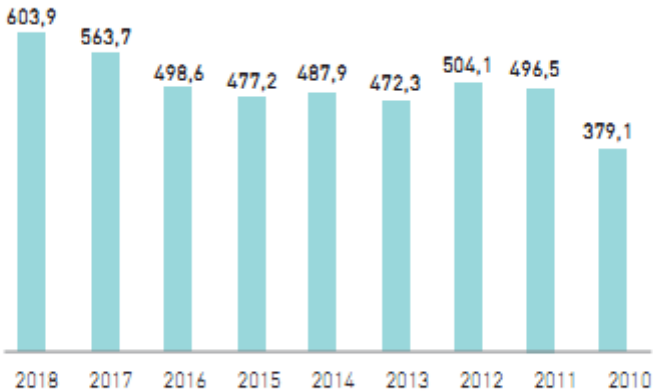
In MD

	2016	2017	2018	1981/2018
Approvals	78,1	123,0	72,4	1452,9
Commitments	69,6	91,5	88,3	1409,9
Loans by withdrawals	67,4	82,3	94,3	1301,6

### 2.2.2.2 Outstanding Loans to Customers

In 2018, net outstanding loans to customers increased by 40,2 MD or 7,1% compared to the figures of 2017. Consequently, the Loan –to–deposit coverage ratio was 84,9% in 2018 against 86,4% in 2017.

**Figure 7: Evolution of net outstanding loans to customers (in M.D)**



### 2.2.2.3 The Net Banking Income

The financial position of the bank at the end of 2018 showed an increase in the net banking income, which rose from 43,5 M.D at the end of December 2017 to 50,7 M.D at the end of December 2018, an increase of 7,2 M.D or 17,7%:

**Figure 8: The Net Banking Income**

Unit :In 1 000 Dinars

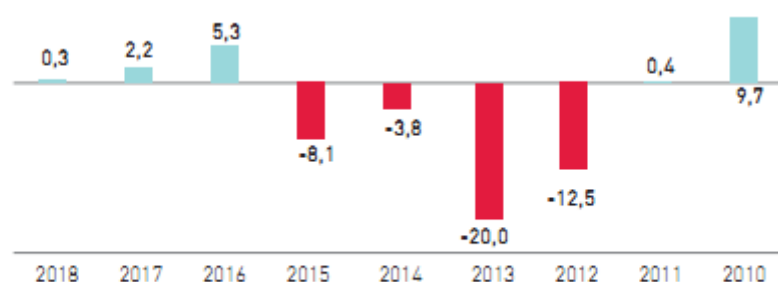
	December 2017	December 2018	Variations	
			Amount	%
<b>Banking Operating Income</b>	69 242	87 623	18 381	26,5
Interest and assimilated revenues	41 556	53 229	11 673	28
Incomes from market transactions	341	403	62	18
Commissions received	13 144	15 524	2 380	18,1
Gains of Commercial portfolio and Financial Operations	5 537	7 417	1 880	34
Investment Portfolio Revenue	8 664	11 050	2 386	27,5
<b>Banking Operating Expenses</b>	(25 737)	(36 863)	(11 126)	43,2
<b>Net Banking Income</b>	43 505	50 760	7 255	16,7

The structure of the Net Banking Income show an evolution of operating revenues which posted a 26,5% increase, reaching 87,6 MD in 2018 from 69,2 MD a year earlier, while operating expenses grew faster (+43,2%) as a consequence of the increase in interest rates on the market following the increase in the policy rate of the Central Bank.

### 2.2.2.3 The Net Income

The Net Income amounted to 0,3 MD in 2018 against 2,2 M.D in 2017, or a decrease of 1,9 M.D.

**Figure 9: The Net Income**



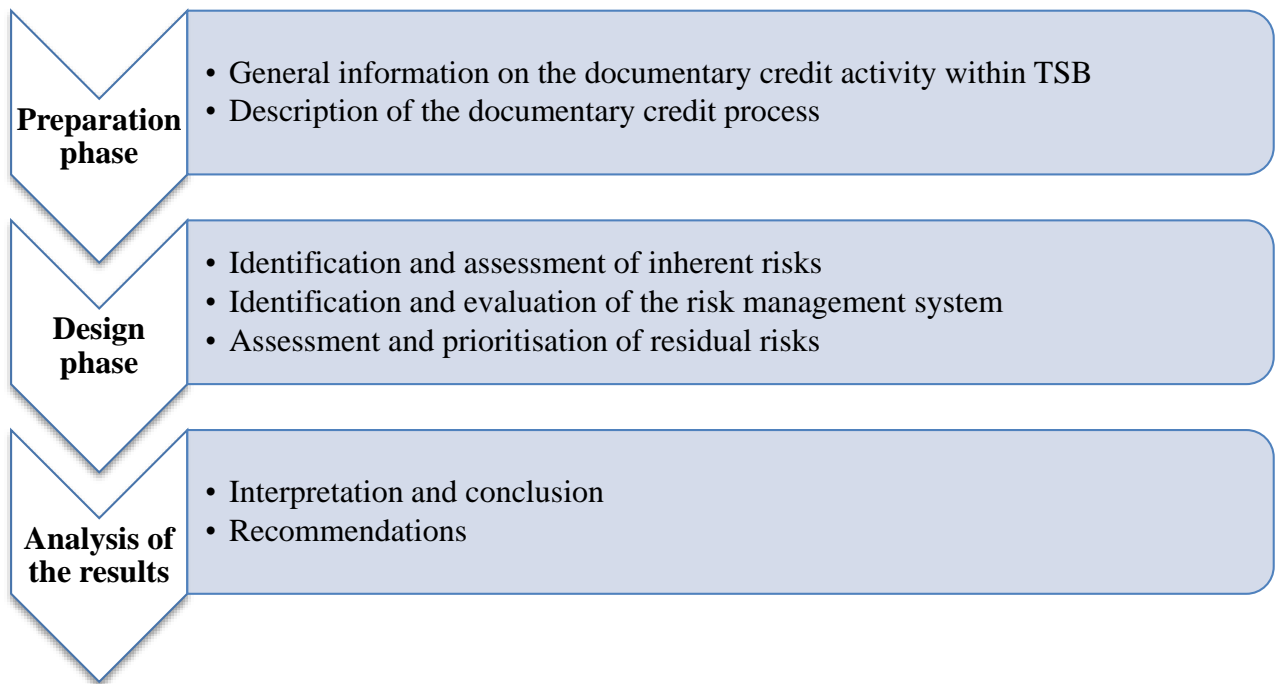


### 3. WORK METHODOLOGY

#### 3.1 Analysis model

In order to draw up our operational risk map, we are going to follow the approach as outlined below:

**Figure 10: analysis model**



**Source: Developed by us**

#### 3.2 Data collection

To collect the data we used the following tools:

##### ❖ Literature review

In order to reframe our database, we have used certain documents:

- The bank's procedure manual describing the documentary credit process
- Internal risk management circulars

##### ❖ Interview

During the internship we conducted interviews with employees involved in the documentary credit process, as well as with the staff in the operational risk department. In

fact, through the interview we could quickly gather information on the topic that is being developed.

❖ **Observation**

This tool provides an overview of the processing of the documentary credit and this by following the mechanism from the customer's submission to the agency until the settlement of L/C. observation is used to find out if professionals or processes operate in the way that they are expected to.

#### **4. Data analysis**

The data analysis in our work is a qualitative analysis based mainly on:

❖ **The risk identification table**

These tables are used to identify the operational risks associated with each process they also serve to present the system for controlling these risks.

❖ **The internal control interview**

This tool is used to determine the effectiveness of internal control.

#### **5. PREPARATION PHASE**

At the outset of this phase it is important to choose the type of mapping that will be set up Thus, in our work we have opted for thematic mapping by choosing the process of documentary credit.

In the first chapter we explained the general process of documentary credit, but its routing differs from one bank to another in terms of its organization. Therefore, in order to assimilate the documentary credit process within our bank and to describe in detail the various steps of this mechanism from a practical perspective, we conducted interviews with professionals and business managers throughout our practical training course.

The main stages of the documentary credit process as well as the parties involved are detailed in the following table:

**Table 13: Import documentary credit process within TSB**

Process	Interveners	Tasks
1- Application for LC	<b>The Branch Manager Commitment</b>	1-receipt of LC application form, invoice and title of commerce from the customer (The customer ask the branch manager to issue LC by using cash or using a commercial credit line)
		2- Check the document and customer instructions
		3- proceed to domiciliation of the title of commerce
		4-Assign a unique domiciliation number to the invoice via TTN
		5- data entry of LC application as customer instruction
		6- Forward the file to trade finance department via electronic mean (global banking system)
2-Verification of documents by the trade finance department	<b>The Foreign Banking Officer</b>	1-check the LC application, title of commerce, and the approval granted to issue the LC
		2- Check the notice of decision to issue LC from the members of the committee and the branch manager
		3-Check the documents submitted by the customer
3-Issue LC via MT 700	<b>TRADE FINANCE DEPARTMENT</b>	1-Choose the correspondent bank
		2-Prepare a SWIFT MT 700 message and send it to the correspondent.
		3-Transmit the file to managers in order to check the SWIFT message MT 700 and all the customer instructions,
		4-issue the LC via the right correspondent bank
		5-Receive the SWIFT MT 730 obtained from the correspondent.
		6-File a copy of the SWIFT message with the acknowledgment of receipt (MT 730).
5-LC Amendement	<b>The Agency's Commitment Officer</b>	1-Collect the request for modification while noting the notifications requested.
		2-Transmit the application stamped by the branch manager to the TFD
	<b>The documentary credit officer</b>	1-Check the regularity of the requested changes.
		2-Request the agreement of the competent department (in case the modification implies the extension of the time limits or the increase of the amount). 3-Prepare the SWIFT MT 707 message The correspondent bank may send MT 799 to confirm amendment (The procedure for amending the credit is the same as the procedure for issuing the credit.)
6-Settlement of LC	<b>The documentary credit officer</b>	1- The correspondent bank may send to issuing bank MT 799 - To confirm that they receive LC complying document and they ask the TSB for payment - To inform that the received LC document from the beneficiary bank are discrepant and they forwarded to the issuing bank for acceptance

		<p>The trade finance department of the issuing bank once they receive the LC document they:</p> <p>2- Check again the document (5 banking day) even they are already checked by the correspondent bank</p> <p>3- Acknowledge receipt of the LC document by MT 730</p> <ul style="list-style-type: none"> <li>• If the LC document are discrepant to inform the applicant they</li> </ul> <p>4- Forward an MT 734 to the correspondent bank, confirming that they hold the document waiting for applicant to accept and waive discrepancies and confirm payment.</p> <ul style="list-style-type: none"> <li>• If the document are not discrepant the issuing bank</li> </ul> <p>5- Inform the applicant and confirm payment to correspondent bank via MT 799 and MT 730</p> <p>If the LC is confirmed and the LC document comply with LC terms and UCP 600 the issuing bank, has an obligation to effect payment even the customer refuse or reject documents since bank deal with document and not goods</p> <p>After payment is effected (at sight, deferred payment or at maturity date) the account of the applicant is debited.</p>
		<p>Once the documents are delivered, the trade finance department</p> <p>6- Notify the customer by fax or telephone the payment value date.</p> <p>(The amount of the LC may or not be negotiated by the applicant with dealing room 48 hours (2 banking) before the value date.)</p> <p>7 -Send payment instructions to the dealing room with all the detail as follow: The amount, the currency, the foreign correspondent account to credit (NOSTRO ACCOUNT. (The bank has a multitude of currencies account open with different foreign bank in the world)</p> <p>Once the treasury department/dealing room confirm the credit of the bank Nostro account the trade finance department</p> <p>9-sent SWIFT MT 202 and MT 799 as per correspondent or beneficiary payment instructions</p>
		<p>Once payment is effected</p> <p>10 -Debit the customer's account with LC amount plus bank commissions and charges.</p> <p>11- Effect some accounting data entry to waive its payment undertaking ( HORS BILAN in French)</p> <p>12 -Close the file</p>
7-customs clearance of goods	<b>The Foreign Banking Officer</b>	<p>1- Proceed to clearance of title</p> <p>2- Financial verification of documents</p> <p>3-Monitoring and reporting of uncleared titles</p>

## 6. THE DESIGN PHASE

### 6.1 Identification of operational risks inherent in the documentary credit process

After decomposing the documentary credit process. This step consists in identifying the main risks inherent to each step. In order to do so, we conducted interviews with the operational staff involved in this process (Agency, Trade Finance department and Risk management department)

In order to detect risks, we use the operational risk nomenclature that we have developed to the recommendations of Basel II.

The results of the interviews we conducted allow us to present the following table:

**Table 14 : Results of the identification of operational risks related to the documentary credit process**

Process	Risk code	Operationalrisks
1- Application for LC	R1	Non fulfillment of domiciliation formalities
	R2	Execution of false or forged documents
	R3	Customer's instructions not respected
	R4	Wrong information sheet
	R5	Non-conformity of the customer signature
	R6	Charge to the wrong account
	R7	Loss of documents handed over by the customer
	R8	Absence of obligatory mentions in the commercial contract
	R9	Execution of an incomplete file
	R10	Omission of blocking provision in case the customer is going to pay with own funds
	R11	Omission to validate the overdraft allowed
	R12	Domiciliation of unauthorised customers (Black Listed)
	R13	No update of settlement schedule and client recovery status
2- Verification of documents by the Foreign Banking Service	R14	Misunderstanding of the prerequisites for importation and the legal regime of the product
	R15	Validation of non-compliant documentary credit opening file
	R16	Missing documents for the opening of the letter of credit

	<b>R17</b>	Non compliance with regulations relating to foreign trade operations (non compliance with incoterms, unauthorised products)
<b>3- Issue LC via MT700</b>	<b>R18</b>	Incorrect entry of SWIFT MT 700
	<b>R19</b>	Non- traceability of MT 700 at system level
	<b>R20</b>	Execution by unauthorised person
	<b>R21</b>	Incorrect entry of the form of LC
	<b>R22</b>	Inconsistent spelling of parties' names
	<b>R23</b>	Risk of error in entering the amount or currency
	<b>R24</b>	The tolerance of weight or number of packages are not respected
	<b>R25</b>	Incorrect choice of the notifying bank
	<b>R26</b>	Delay in receipt of SWIFT MT 730 (acknowledgment of receipt due to (Covid-19)
	<b>R27</b>	Error in the choice of payment method
<b>4- Modification of LC</b>	<b>R28</b>	Erroneous processing of changes requested by the customer
	<b>R29</b>	Misunderstanding of the terms of amendment
	<b>R30</b>	Not levying of commissions after the amendments of the LC
	<b>R31</b>	Erroneously debiting change fees from the importer's account even though they are payable by the beneficiary
	<b>R32</b>	Incorrect sending of a SWIFT MT 707 message
<b>5-Settlement of the LC</b>	<b>R33</b>	Failure to comply with deadlines for checking documents
	<b>R34</b>	Merchandise/Goods description not strictly as per LC terms
	<b>R35</b>	Insurance document dated later than bill of lading (after shipment date)
	<b>R36</b>	Insurance document does not cover risk stipulated in LC
	<b>R37</b>	Draft not signed or drawn incorrectly
	<b>R38</b>	Partial or transshipment effected when L/C prohibits
	<b>R39</b>	Non-compliance of the documents presented with the documentary credit agreement
	<b>R40</b>	Loss of documents
	<b>R41</b>	Receipt of documents from other banks
	<b>R42</b>	Credit validity date and shipping deadline not met
	<b>R43</b>	Error of double payment of an LC
	<b>R44</b>	Insider breaches (malicious intent from employee )
	<b>R45</b>	Incorrect debiting to the customer's account due to non-updates rates
	<b>R46</b>	Incorrect application of a guarantee margin

	<b>R47</b>	Error in the calculation of commissions, SWIFT fees and other disbursements
	<b>R48</b>	Delay in sending the MT 202 or MT 740 message
	<b>R49</b>	System malfunction
	<b>R50</b>	Late receipt of the call for funds SWIFT MT 754
	<b>R51</b>	Lack of Feedback from the Dealing Room
	<b>R52</b>	Failure to note a major reservation that the client could have refused to lift
	<b>R53</b>	Transmission of documents to the customer without a signed release
	<b>R54</b>	SWIFT payment not generated (recording interest on arrears)
6- customs clearance of good	<b>R55</b>	Discrepancy between the settlement amount and the clearance amount
	<b>R56</b>	lack of documents required for clearance
	<b>R57</b>	System malfunction

## 6.2 Risk assessment

This step is crucial since the quantification of risks is the objective of the mapping process. Actually, at this stage we conducted interviews with operational staff to better assess the risks that could threaten the LC process and even the bank's activity.

This step requires the implementation of scales for rating operational risks in terms of likelihood and impact.

**Table 15: Risk likelihood rating scale**

Rating	Likelihood	Description
1	Extremely rare	Once every 2 to 5 years
2	Rare	Once a year
3	Occasional	Once or more times per semester
4	Frequent	Once or several times a month
5	Very frequent	Once or several times a week
6	Serious or systematic	Once or several times a day

**Source: Benchmark bank in the Tunisian banking sector**

**Table 16: Risk impact assessment scale**

<b>Consequence Rating</b>	<b>Descriptor</b>	<b>Scale</b>
<b>Low</b>	Low impact	Less than 1% of the bank's capital requirement for operational risk
<b>Moderate</b>	Tolerable impact	1 % <X<5 % of the bank's capital requirement for operational risk
<b>Meduim</b>	Manageable impact	5%<X<10 % of the bank's capital requirement for operational risk
<b>High</b>	Significant impact	10%<X<15 % of the bank's capital requirement for operational risk
<b>Major</b>	Serious impact	X>15 % of the bank's capital requirement for operational risk
<b>Criticism</b>	Unacceptbale impact	Level of exposure assessed not in relation to the losses recorded but with the potential impact considered very significant

**Source: Benchmark bank in the Tunisian banking sector**

The table below illustrates the results of the assessment of the operational risks associated with each step.

### **6.3 Critically risk assessment**

Once we have identified the risks associated with each step of the import documentary credit process we will move on to the assessment. Actually, the inherent risks will be classified according to a quantitative scale that reflects the criticality of these risks.

At this stage, it is necessary to set up a criticality assessment matrix for the inherent risks, which is the result of multiplying the impact with the likelihood.



**Figure 11: Inherent Risk Criticality Assessment Matrix**

		<b>Criticality</b>					
<b>Likelihood</b>	<b>6</b>	6	12	18	24	30	36
	<b>5</b>	5	10	15	20	25	30
	<b>4</b>	4	8	12	16	20	24
	<b>3</b>	3	6	9	12	15	18
	<b>2</b>	2	4	6	8	10	12
	<b>1</b>	1	2	3	4	5	6
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
		<b>Impact</b>					

The risk assessment matrix is used to approach risks according to its level of occurrence. It's a visual depiction of the risks affecting the organization.

Indeed, in order to make the risk assessment matrix consistent, we used a correspondence table for the rating, which resulted in the following conversions:

- [1,5] = 1: **Low risk**
- [6,10] = 2: **Moderate Risk**
- [12,18] = 3: **High Risk**
- [20,25] = 4: **Major risk**
- [30,36] = 4: **Critical risk**

#### **6.4 Prioritization of inherent risks**

In order to classify the risks related to the documentary credit process we are based on the combination (Likelihood/Impact), and for each operational risk we have determined the associated criticality (Inherent risk).

The results we have obtained are presented in the matrixes below:

Figure 12: Matrix of risks inherent to the step “Application for LC”

		Criticality					
Likelihood	6	Yellow	Orange	Orange	Red	Grey	Grey
	5	Green	Yellow	Orange	Red	Red	Grey
	4	Green	Yellow	Orange	Orange	Red	Red
	3	R8 R13	R4	Yellow	Orange	Orange	R2
	2	R1	R3 R7	Yellow	Yellow	R9	Orange
	1	Green	Green	Green	R11	R6	R5 R10 R12
		1	2	3	4	5	6
		Impact					

Figure 13: Matrix of risks inherent to the step: “Verification by the TFD”

		Criticality					
Likelihood	6	Yellow	Orange	Orange	Red	Grey	Grey
	5	Green	Yellow	Orange	Red	Red	Grey
	4	Green	Yellow	Orange	Orange	Red	Red
	3	R16	Yellow	Yellow	Orange	R15	Orange
	2	Green	Green	Yellow	Yellow	Yellow	Orange
	1	Green	R14	R17	Green	Green	Yellow
		1	2	3	4	5	6
		Impact					

Figure 14: Matrix of risks related to the step: “Issuing LC via MT 700”

		Criticality					
Likelihood	6	Yellow	Orange	Orange	Red	Grey	Grey
	5	Green	Yellow	Orange	Red	Red	Grey
	4	Green	Yellow	Orange	Orange	Red	Red
	3	Green	Yellow	R24	Orange	Orange	Orange
	2	R26	Green	R21 R22	Yellow	Yellow	R19
	1	Green	R18 R25	R23 R27	Green	Green	R20
		1	2	3	4	5	6
		Impact					

**Figure 15: Matrix of risks related to the step: “Modification of LC”**

		Criticality					
Likelihood	6						
	5						
	4						
	3			R31			
	2	R30					R28
	1		R29 R32				
			1	2	3	4	5
		Impact					

**Figure 16: Matrix of risks related to the step: “Settlement of LC”**

		Criticality					
Likelihood	6						
	5						
	4	R39 R41 R42					
	3		R38				
	2	R50		R47 R49 R51	R33 R37	R54	
	1		R35 R36 R45 R46 R48 R52 R53	R40	R34		R43 R44
			1	2	3	4	5
		Impact					

**Figure 17: Matrix of risks related to the step: “customs clearance of goods”**

		Criticality					
Likelihood	6						
	5						
	4		R55				
	3						
	2			R57			
	1				R56		
		1	2	3	4	5	6
		Impact					

### 6.5 Identification and evaluation of control measures

The operational risk actually borne by the bank depends on the control system implemented to prevent or eliminate risk event. In such manner, the identification and evaluation of existing control measures will be carried out on the basis of the study of organizational arrangements and the answers to the internal control interviews.

In order to mitigate the residual operational risks, we will use a scale for assessing internal controls

**Table 17: Rating scale for internal control**

Control efficiency	Cotation	Description
<b>Inexistent</b>	1	No control
<b>Insufficient</b>	2	The control applied make it possible to reduce the criticality of the inherent risk to less that 30%
<b>Sufficient</b>	3	The control applied makes it possible to reduce between 30% and 60% from the criticality of the inherent risk
<b>Efficient</b>	4	The control applied makes possible to reduce more than 60% from the criticality of the inherent risk.

**Source: Developed by us**

The elements of the control system adopted by the TSB to control operational risks are as follows:

#### ❖ **Monitoring or self- assessment**

It is a control carried out by the staff included in the documentary credit process. In such manner, each participant must ensure that the operations carried out are justified and correctly recorded.

#### ❖ **Permanent control**

Permanent control is often carried out by the line manager, indeed, the role of the latter is to monitor and control the compliance and validation of the operation.

#### ❖ **The organization**

The organization of the various units involved in the documentary credit process is a fundamental component of risk management. Indeed, the procedure, the organization chart and the job descriptions clearly define the tasks and responsibilities of each employee. This promotes process control while reducing the frequency of risk events and ensuring the traceability of operations.

#### ❖ **Staff qualification**

Professionals involved in the documentary credit process must have the necessary skills and experience to deal with operational risks. For this reason, recruitment within TSB is based solely on the recruiting competence and its added value for the bank.

In order to further promote the skills of its staff, TSB has not stopped organizing internal and external sessions for its staff.

### **6.6 Residual risk assessment**

In order to determine the level of residual risk at each stage, we applied a risk control system, which makes it possible to amortize both the likelihood and the impact. We will then use these risks to draw up an action plan to mitigate these risks, taking into account the objectives of TSB its level of risk appetite without forgetting the resources allocated in this respect.

The results of the assessment of operational risks related to documentary credit process are presented in appendix

### 6.7 Prioritization of residual risk

After assessing the residual risks associated with each stage, we will classify them based on matrixes in order to establish visibility over all risks and to determine the priorities for risk treatment with a view to improving control systems.

Figure 18: Matrix of the residual risks of the step “Application for LC”

		<b>Criticality</b>					
<b>Likelihood</b>	6	Yellow	Orange	Orange	Red	Grey	Grey
	5	Green	Yellow	Orange	Red	Red	Grey
	4	Green	Yellow	Orange	Orange	Red	Red
	3	R8 R13	R4	Yellow	Orange	Orange	Orange
	2	R1	R3 R7	Yellow	Yellow	R2	Orange
	1	Green	Green	Green	R9 R11	R5 R6 R10 R12	Yellow
		1	2	3	4	5	6
		<b>Impact</b>					

Figure 19: Matrix of the residual the risks of the the step:” Verification by TFD”

		<b>Criticality</b>					
<b>Likelihood</b>	6	Yellow	Orange	Orange	Red	Grey	Grey
	5	Green	Yellow	Orange	Red	Red	Grey
	4	Green	Yellow	Orange	Orange	Red	Red
	3	R16	Yellow	Yellow	Orange	Orange	Orange
	2	Green	Green	Yellow	R15	Yellow	Orange
	1	Green	R14	R17	Green	Green	Yellow
		1	2	3	4	5	6
		<b>Impact</b>					

**Figure 20: Matrix of the residual risks of the step: “Issuing an LC by MT 700”**

		Criticality					
Likelihood	6						
	5						
	4						
	3						
	2	R26	R24				
	1		R18 R21 R22 R25	R23 R27		R19 R20	
		1	2	3	4	5	6
		Impact					

**Figure 21: Matrix of the residual risk of the step: “Modification of LC”**

		Criticality					
Likelihood	6						
	5						
	4						
	3			R31			
	2	R30			R33		R28
	1		R29 R32				
		1	2	3	4	5	6
		Impact					

**Figure 22: Matrix of the residual risks of the step: “Settlement of LC”**

		Criticality					
<b>Likelihood</b>	6						
	5						
	4	R39 R41 R42					
	3						
	2	R38 R50			R33		
	1		R35 R36 R45 R46 R47 R48 R49 R51 R52 R53	R37 R40	R34 R54	R43	R44
			1	2	3	4	5
		<b>Impact</b>					

**Figure 23: Matrix of the residual risks of the step risks of the step: “customs clearance of goods”**

		Criticality					
<b>Likelihood</b>	6						
	5						
	4						
	3	R55					
	2						
	1		R57		R56		
		1	2	3	4	5	6
		<b>Impact</b>					

## 7. ANALYSIS OF RESULTS AND ACTION PLAN

After evaluating and classifying the residual risks related to the documentary credit process this step consists of interpreting the results we have obtained in order to have an overall view



and a relevant analysis of all operational risks and to subsequently facilitate the implementation of an action plan aimed at mitigating these risks.

### 7.1 Consolidated representation of results

In order to consolidate the risk ratings for each stage, we have added the inherent risk ratings and the residual risk ratings for each step of the documentary credit process. The results we obtained were used to calculate the rate of coverage of the inherent risk by the residual risk for each stage. The formula used is as follow:

$$Risk\ coverage\ rate = \frac{Inherent\ risk - Residual\ risk}{Residual\ risk} \times 100$$

We have also calculated the concentration rate of residual risk per stage in order to highlight the riskiest steps. To do so, we used the following formula:

$$Risk\ concentration\ rate = \frac{Residual\ risk\ per\ transaction}{Total\ residual\ risk} \times 100$$

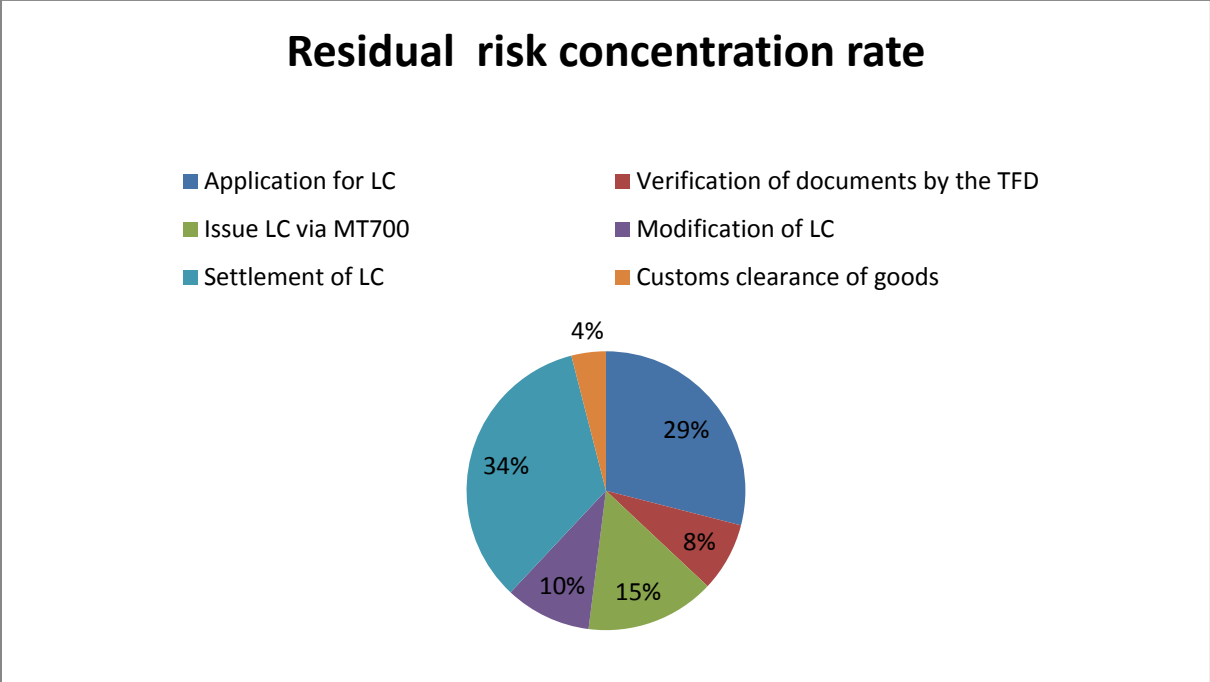
**Table 18: Grid for consolidating risk rating by step**

Step	Inherent risk	Residual risk	Risk coverage rate	Residual risk concentration rate
Application for LC	77	60	22%	29%
Verification of documents by the TFD	23	16	30%	8%
Issue LC via MT700	51	30	41%	15%
Modification of LC	27	20	26%	10%
Settlement of LC	97	69	29%	34%
Customs clearance of goods	18	9	50%	4%
<b>Total</b>	<b>293</b>	<b>204</b>	<b>30%</b>	<b>100%</b>

**Source: Developed by us**

The table below shows the most risky steps in the documentary credit process

**Figure 24: Graphical representation of the residual risk contribution for each process step**



From the graph we can see that the step “settlement of LC” is more prone to operational risks with a residual risk concentration rate of 34%. Indeed, this stage contributes with 22 risk events that is a percentage of 36%. This result is expected since it is the most important step in the documentary credit process. The concentration of risks at this stage is mainly due the errors in data entry or verification and non compliance with the rules governing documentary credit.

These risks arise when the control carried out is ineffective. For example, when the processing and validation of the files is not supervised and more particularly in the case of accumulation of tasks and work overload.

The step “Application of LC” comes in second rank with a residual risk concentration rate of 29%. This rate is mainly due to the R28 and R31, as these events are the most risky. However, the control system at this step mitigated the inherent risk by 35%.

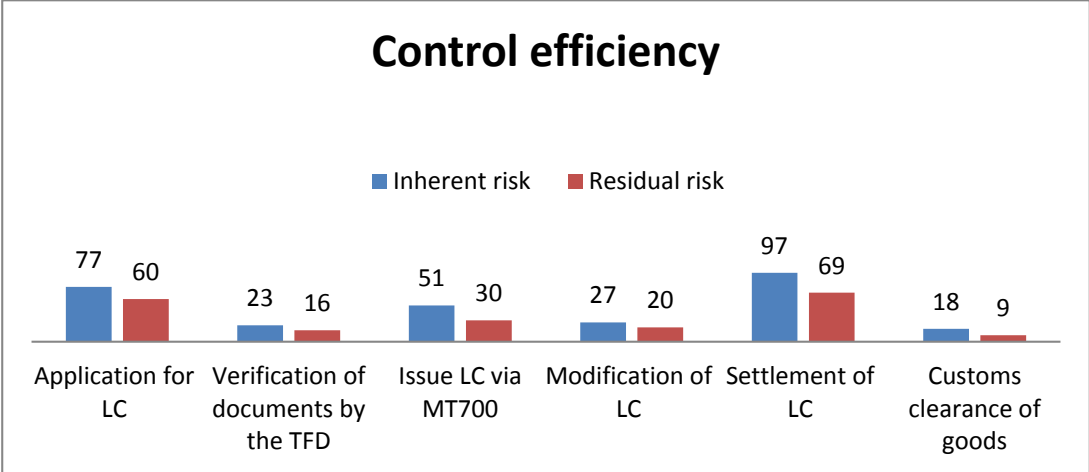
The graph above also indicates that the step “Issue LC via MT 700” is ranked third with a residual risk concentration rate of 15%. R19, R20, R21, R22 and R24 are the most risky events that we have identified. To mitigate the operational risks at this level, we have noticed that operational staff relies on self-assessment and continuous monitoring.

We note that the steps “Modification of LC”, “Verification of documents by the TFD” and “Customs clearance of goods” are the least risky with a residual risk concentration rate of 10%, 8% and 4% respectively.

**7.2 The effectiveness of the risk management system**

In order to highlight the role of the control system in risk management, we have drawn up matrices associated with each stage at the outset of our work. Indeed, in order to affirm this observation and summarize the results we have obtained. Indeed, to affirm this observation and to indicate the control effect at each stage we have used the following chart:

**Figure 25 : Representation of the control effect for each stage of documentary credit**



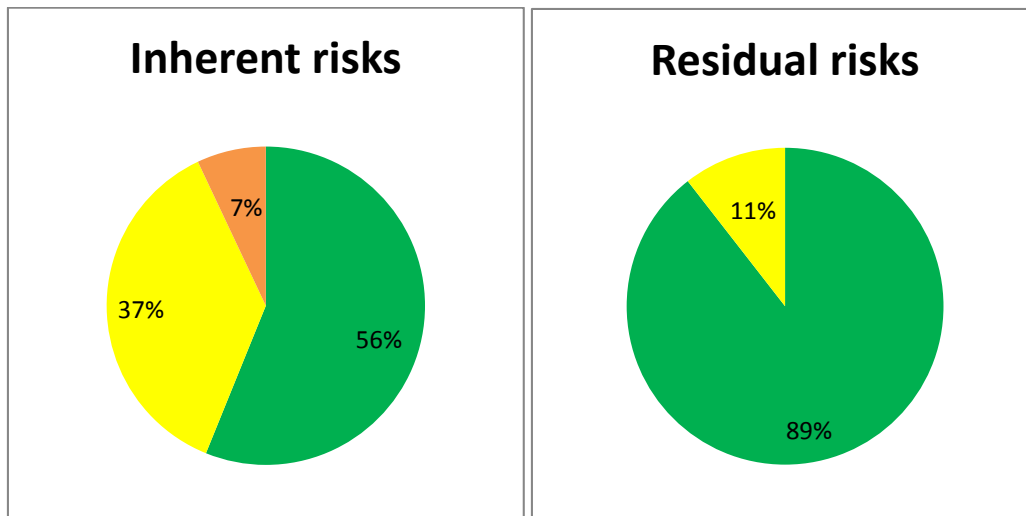
**Source: Developed by us**

From the bar chart below we can clearly see that the controls are more effective in the phase of “Customs clearance of goods” and the phase “Issue LC via MT 700” with coverage rates of 50% and 41% respectively.

The control system proves to be insufficient for the others steps of the documentary credit process.

In order to get an overview of the existing risk measures and the control effect within TSB we have drawn up the following chart:

**Figure 26: The effect of control on the criticality of risks**

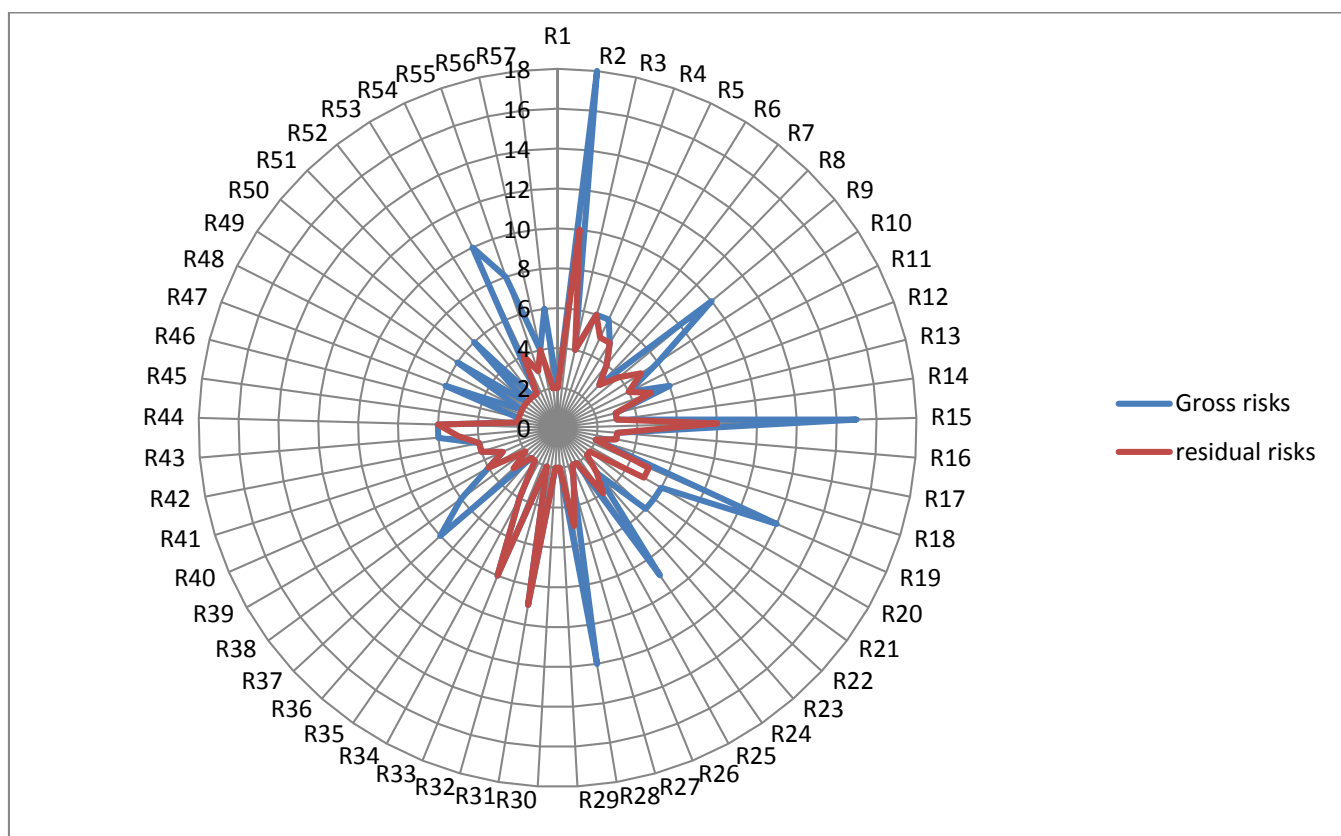


**Source: Developed by us**

The pie chart above illustrates risk events before and after the existing control. We can clearly see that the control system has totally eliminated high-risk events and declined moderate risk from 37% to 11%. However, low-risk events have increased from 56% to 89%.

In order to better demonstrate the existing control mechanism we propose a spider's web graph including all the identified risks. This allows us to show the shift from inherent to residual risks.

**Figure 27: Inherent and residual risks in spider webs**



**Source: Developed by us**

### 7.3 Processing of residual risks

This is a crucial step in operational risk management. Indeed, we are going to proceed to the treatment of these risks according to the likelihood and seriousness of each risk. The additional measures that we propose to follow concern second zone risks with a moderate likelihood or impact (yellow zone) and low risks (green zone) which have a tendency to recur and which may affect the bank's management.

The table below indicates the risks to be controlled and the measures proposed:

**Table 19: Additional measures for identified operational risks**

<b>Risk code</b>	<b>Identified operational risk</b>	<b>Corrective actions</b>
<b>R2</b>	Execution of false or forged documents	-Enhance the permanent control -Implement double checks even after regulatory control. -Set up a regular inspection to verify the authenticity of the documents handed over by the customer.
<b>R4</b>	Wrong information sheet	-Strengthening hierarchical control. -Enhance communication with the customer (the commitments officer may need to ask customer for more clarification) -Improve competence by ensuring the continuous training of personnel
<b>R15</b>	Validation of non-compliant documentary credit opening file	-Regular monitoring by the line manager -pay special attention to the quality of document control and transaction processing practices
<b>R31</b>	Erroneously debiting change fees from the importer's account even though they are payable by the beneficiary	-Regular monitoring of customer transactions -Ensure periodic monitoring of account reconciliation.
<b>R33</b>	Failure to comply with deadlines for checking documents	- Enhance the control system through hierarchical supervision -identify appropriate indicators that provide early warning about the verification of documents
<b>R44</b>	Insider breaches (complicity of the operational and the customer )	-Reinforcement of the file control system - Establishing a strong ethical compass within the bank -Implement a strong internal auditing procedures
<b>R5</b>	Non-conformity of the customer signature	- Setting up a policy of customer due diligence (CDD)
<b>R6</b>	Charge to the wrong account	-Set up a system for the continuous monitoring of customer accounts and transactions

<b>R19</b>	Non- traceability of MT 700 at system level	-Set up alert system in case of non-traceability of SWIFT messages. -Introduction of a multi-criteria search system (by type of SWIFT and by day)
------------	---	--

## 7.4 Shortcomings and recommendations

During the internship period we noted several shortcomings in the management of operational risks related to the documentary credit process.

These shortcomings are arranged as follows:

- TSB does not have a global mapping of operational risks
- TSB does not have an internal database for collecting incidents
- Based on interviews with employee, we noted that the concept of operational risk is not yet under control.
- The discussion also touched upon the impact of Covid-19 on the bank's activities in general and the Trade Finance Department in particular. According to these analyses, we have noticed that there is an insufficiency of staff. In addition, the absence of one of the staff members (at the level of TFD) can affect the documentary credit process.

In fact in order to design a more robust risk management framework

The Initiatives required to be taken by TSB in this regard will include the following:

### ❖ **Dissemination of a risk culture within the bank**

This strategy is fundamental for the bank in order to ensure better risk management while involving all staff. This strategy will make it possible to mitigate risks and make staff aware of the danger of operational risk.

In fact, the board of directors and senior management are responsible for producing early warning of operational risks and establishing a culture within the bank that emphasizes and demonstrates the importance the importance of operational risks to all levels of personnel.

### ❖ **segregation of duties**

Effective separation of tasks and responsibilities can reduce internal theft and fraud-related risks. This prevents a person from taking advantage of many aspects of transactions and business processes or practices.

#### ❖ **Dissemination of procedures manual**

For the proper conduct of its activities, the TSB must disseminate its procedures manual and ensure its application. Its distribution is a guarantee of security for the bank because it gives staff responsibility through clear definition of functions and responsibilities.

#### ❖ **Review of internal regulatory texts**

During the training period we found that procedures within TSB are not sufficiently detailed. Indeed, in order to strengthen operational risk management, we propose that these booklets be updated to describe the overall processes for all banking operations processing.

#### ❖ **Monitoring and evaluations at regular intervals**

Business processes are more efficient thanks to well-designed performance indicators. Indeed, key performance indicators (KPIs) are essential for timely detection and mitigation of risks, as long as they are continuously monitored and reviewed. This helps to proactively identify discrepancies and manage them accordingly.

#### ❖ **Periodic risk assessment**

Regular assessment of all aspects of operational risk can bring more relief to the organization and management. You must be prepared for risk by measuring regulatory obligations, IT assets, skills, capabilities, processes, and business decisions.

#### ❖ **Curtailing complexities in business processes**

Reducing the complexity in various business processes can fundamentally alleviate operational risks. Organizations can achieve this goal by reducing manual activities and increasing the number of personnel and exceptions during the implementation of business processes.

#### ❖ **Look back and learn**

Risk events and various remedial measures used in the past make way for some of the most effective strategies for dealing with future risks. The risks that have occurred before contribute to the implementation of a stronger and proactive operational risk management framework. It also supports real-time revisions suitable for current operating scenarios.



### ❖ **The right people for the right job**

The bank must strive to equip all departments with the right number of experienced and well-trained employees so that they can perform tasks in a way that avoids unnecessary risks.

### ❖ **Reinforcing organizational ethics**

Establishing a strong ethical compass within the bank can effectively reduce operational risk management. By combining personal values and employee principles with the ideology of the bank, organizational ethics can be strengthened.

### ❖ **Implementation of a regulatory monitoring entity**

This entity enables to ensure compliance with the procedures and regulatory texts in force as new perspective that will take place (e.g. reading the incoterms or the introduction of international banking practices in 2013). This entity will be responsible for risk control systems.

## **CONCLUSION**

In conclusion, we can assume that the operational risk mapping that we have restated is useful insofar as it provides a global and synthetic view of the risk events that may threaten the documentary credit process within the TSB.

Indeed, this exercise can reveal weaknesses and help prioritize subsequent management measures to reduce the bank's exposure to operational risks while improving the control system.

In fact, throughout this chapter we have proposed certain corrective measures which we have designed and which seem necessary in order to implement effective management and relevant assessment of the operational risks related to the documentary credit process.

This study also enabled us to identify TSB's need for historical data on operational losses, which will enable us to develop more sophisticated methods and more advanced measures on the future.

According to our study, the documentary credit process within TSB is exposed to 57 operational risks. After the assessment we noticed that among these risks only 11% of the risks are in the yellow zone (moderate risks). This shows that the existing risk management system is effective but could always be improved for a better management of operational risks.

Testimonies and discussions with TSB professionals have allowed us to note that in addition to the risks we have identified, and particularly in the case of TSB,

## **GENERAL CONCLUSION**

Operational risk is pervasive, complex and dynamic. Unlike credit and market risk, which tend to be in specific areas of business, operational risk is inherent in all business processes. Such risk may also manifest in a variety of ways in banking activities.

With that in mind, operational risk management has become a priority and a major challenge for both banks and financial institutions. Actually, risk mapping is considered to be a valuable tool as it allows any organization to understand the risk environment, prioritize mitigation strategies in order to manage the inherent risks.

The purpose of this study was to focus on the management of operational risks related to the documentary credit process, one of the main activities of the bank. In this perspective, we are interested in operational risk mapping, which appears to be a tool for identifying, assessing and controlling the risks that may affect this process by causing considerable losses.

This paper enabled us to carry out an efficient management and a relevant assessment of the operational risks related to the documentary credit process within the TSB in order to propose adequate corrective measures that can be adopted.

According to our study, the documentary credit process within TSB is exposed to 57 operational risks. After the assessment we noticed that among these risks only 11% of the risks are in the Yellow zone (moderate risk). In a similar way, our finding mention that the documentary credit process is always exposed to operational risks. Moreover, the step “Settlement of LC” is considered to be the riskiest stage. We also underline that the control system within TSB is effective but still needs to be improved to ensure a better management of these risks.

Testimonies and discussions with TSB professionals have allowed us to note that in addition to the risks that we have identified, that the human error resulting from a lack of concentration and the accumulation of tasks can be a major vulnerability for the bank, which risk losing considerable amounts of money and valuable data records, not to mention the ongoing damage to its reputation. We also mentioned the cyber security threats as a major risk that can affect not only the documentary credit but the entire bank’s activity.

For a better management of the operational risks related to the documentary credit process within TSB we have recommended the dissemination of the operational risk culture through the implementation of training and conferences on this topic in addition the setting up of a risk mapping that takes into account the entire bank's activities and the improvement of tools for steering, measuring and managing operational risks.

This study has important implications since it has provided an overview of the operational risks that may affect the documentary credit process and by casting the light on the methodology used to draw up the risk map in order to mitigate these risks.

Finally, we hope that this study will serve as a starting point for the TSB, and that it can be extended to all the bank's structures in order to improve the management of operational risks.



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## APPENDICES

			Likelihood	impact	Inherent risk	control structures	Control efficiency	Residualrisk	
Process	Risk code	Operationalrisks	L	I				L	I
1- Application for LC	R1	Non fulfillment of domiciliation formalities	2	1	2	review the regulatory references concerning domiciliation + Hierarchical control at the level of TFD	3	2	1
	R2	Execution of false or forged documents	3	6	18	the competence of staff to detect and report fraudulent operations	3	2	5
	R3	Customer's instructions not respected	2	2	4	verification by the branche manager	4	2	2
	R4	Wrong information sheet	3	2	6	hierarchical control + review the circular of the CBT n 97/02 of 24/01/1997 concerning information sheets	2	3	2
	R5	Non-conformity of the customer signature	1	6	6	checks the identity document and the signature in the account before accepting the application to open the LC	4	1	5
	R6	Charge to the wrong account	1	5	5	Control by the branch manager	3	1	5
	R7	Loss of documents handed over by the client	2	2	4	the commitments officer scans the documents submitted by the customer to download them in case of loss	3	2	2
	R8	Absence of obligatory mentions in the commercial contract	3	1	3	Manual processing and control +verification by the branche manager	2	3	1

	<b>R9</b>	Execution of an incomplete file	2	5	10	Introduce double cheks	3	1	4
	<b>R10</b>	Omission of blocking provision in case the customer is going to pay with own funds	1	6	6	Self assessment+line manager assessment	3	1	5
	<b>R11</b>	Ommission to validate the overdraft allowed	1	4	4	Self assesment+ line manager assessment	4	1	4
	<b>R12</b>	Domiciliation of unauthorised customers (Black Listed)	1	6	6	the commitment must study the customer risk (consult the database of black-listed customers)	3	1	5
	<b>R13</b>	No update of settlment schedule and client recovery status	3	1	3	Continuous updating of the customer's recovery status	3	3	1
<b>2- Verification of documents by the Foreign Banking Service</b>	<b>R14</b>	Misunderstanding of the prerequisites for importation and the legal regime of the product	1	2	2	verification of regulatory reference concerning the legal status of each good	4	1	2
	<b>R15</b>	Validation of non-compliant documentary credit opening file	3	5	15	self assessment+ hierachical monitoring	3	2	4
	<b>R16</b>	Missing documents for the opening of the letter of credit	3	1	3	the file is already scanned and inserted in the TSB portal	3	3	1
	<b>R17</b>	Non compliance with regulations relating to foreign trade operations (non compliance with incoterms, unauthorised products)	1	3	3	Review the UCP international rules + hierarchical control	4	1	3

3- Issue LC via MT700	<b>R18</b>	Incorrect entry of SWIFT MT 700	1	2	2	self assessment+ hierachical monitoring	4	1	2
	<b>R19</b>	Non- traceability of MT 700 at system level	2	6	12	verification at system level	3	1	5
	<b>R20</b>	Execution by unauthorised person (a trainee)	1	6	6	continuous monitoring by the foreign bank officer	4	1	5
	<b>R21</b>	Incorrect entry of the form of LC	2	3	6	self control+ hierarchical control	4	1	2
	<b>R22</b>	Inconsistent spelling of parties' names	2	3	6	Self assessment + continuous monitoring by the line manager	3	1	2
	<b>R23</b>	Risk of error in entering the amount or currency	1	3	3	Self assessment + continuous monitoring by the line manager	3	1	3
	<b>R24</b>	The tolerance of weight or number of pakages are not respected	3	3	9	Self assessment + continuous monitoring by the line manager	3	2	2
	<b>R25</b>	Incorect choice of the notifying bank	1	2	2	Self assessment + continuous monitoring by the line manager	4	1	2
	<b>R26</b>	Delay in receipt of SWIFT MT 730 (acknowledgment of receipt due to (Covid-19))	2	1	2	Contininuous monitoring of SWIFT messaging + Self control + hierarchical control	3	2	1
	<b>R27</b>	Error in the choice of payment method	1	3	3	self assessment+ hierachical monitoring	3	1	3

<b>4- Modification of LC</b>	<b>R28</b>	Erroneous processing of changes requested by the customer	2	6	12	self assessment	3	1	5
	<b>R29</b>	Misunderstanding of the terms of amendment	1	2	2	Regular staff training + self assessment	3	1	2
	<b>R30</b>	Not levying of commissions after the amendments of the LC	2	1	2	self assessment+ hierachical monitoring	2	2	1
	<b>R31</b>	Erroneously debiting change fees from the importer's account even though they are payable by the beneficiary	3	3	9		2	3	3
	<b>R32</b>	Incorrect sending of a SWIFT MT 707 message	1	2	2	continual training + Technical validation guide	3	1	2
<b>5-Settlement of the LC</b>	<b>R33</b>	Failure to comply with deadlines for checking documents	2	4	8		2	2	4
	<b>R34</b>	Merchandise/Goods description not strictly as per LC terms	1	4	4	Visual verification of documents by the TSB's documentary credit officer	3	1	4
	<b>R35</b>	Insurance document dated later than bill of lading (after shipment date)	1	2	2	Self assessment+ Line manager control	4	1	2

<b>R36</b>	Insurance document does not cover risk stipulated in LC	1	2	2	Self assessment + continuous monitoring by the line manager	3	1	2
<b>R37</b>	Draft not signed or drawn incorrectly	2	4	8	Self assessment + continuous monitoring by the line manager	4	1	3
<b>R38</b>	Partial or transshipment effected when L/C prohibits	3	2	6	Self assessment + continuous monitoring by the line manager	3	2	1
<b>R39</b>	Non-compliance of the documents presented with the documentary credit agreement	4	1	4	Self assessment + continuous monitoring by the line manager+ ongoing training	3	4	1
<b>R40</b>	Loss of documents	1	3	3	preservation of documents by scanning	3	1	3
<b>R41</b>	Receipt of documents from other banks	4	1	4	Self assessment + continuous monitoring by the line manager	3	4	1
<b>R42</b>	Credit validity date and shipping deadline not met	4	1	4	Self assessment + continuous monitoring by the line manager	2	4	1
<b>R43</b>	Error of double payment of an LC	1	6	6	self assessment + continuous monitoring+ hierarchical control	3	1	5
<b>R44</b>	Insider breaches (complicity of the operational and the customer )	1	6	6		2	1	6
<b>R45</b>	Incorrect debiting to the customer's account due to non updates rates	1	2	2	Self assessment+ line manager assessment	3	1	2





	<b>R57</b>	System malfunction	2	1	2	Contact the IT department	3	1	2
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