Chapter 1:

An Introduction to the research
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Risk and danger have always existed in the essence of all the business and commercial affairs. It contains a wide range of customers’ services, fame, technology, security, human resources, market prices of goods and services, financing, legal affairs, personnel infractions, and definitely the institutes’ strategies.

In the case of banks and financial institutes, credit risk is the most important factor which has to be managed. Although credit risk can be the result of different causes, these kinds of risks mainly arise from economical crisis, the companies’ bankruptcy, lack of rules and regulations in the companies’ accountancy and auditing process, the increase of off-balance sheet obligations, the devaluation of collaterals, and etc. A brief review on the essence of these causes shows that most of them are those which are out of the control of management of the banks and financial institutes.

Therefore, in the process of their activities the banks are affected from these factors. The lack of proper and trustable tools and procedures to prevent these dangers in the banks and financial institutes and deficiency
of different risk management methods will confront them with a wide range of risks. In order to describe the importance of credit risk management, it is sufficient to mention that between the years of 1989 to 1997, among the United States’ banks, return on equity (ROE) in the ones with the risk management system were %56 more than average.

1.1 Statement of the problem:

Because of the importance of credit risk in the banks and financial institutes and the role of such management risks, there has been much attention to the credit risk management, during the past few years. Following such attention, different methods and tools have been introduced and repeatedly reviewed.

Although the given methods and tools have been effective in the situation of credit risk management, there has been a question remained that “Are the tools, methods, and models given and introduced, sufficient for the establishment of a full and comprehensive system of risk management?” The answer to such question is important from the viewpoint of its capability of establishing effective and comprehensive credit risk management system in the banks, and also review and improve the existing one. In this research, the main problem is to find the answer to such question.

1.2 Goals and objectives:

The aim of the following research is to study the existing methods and models of credit risk management in the banks, evaluate the studied models and methods, and in the end to present a comprehensive and effective model for credit risk management in the commercial banks.

As it has been defined, credit risk is the probability of a delay or non payment from the side of the borrowers or their partners, or if the above mentioned people will not perform their obligations according to the agreed conditions”. Therefore, credit risk arises from granting a loan to a legal corporate or individual, another bank or even another country.”
Whatever the origin of credit risk is, an efficient credit risk management can help the bank in identification, assessment, proactive management, and improvement of credit risk in all levels of individual, company and countrywide. In this study, we are trying to design an agreeable and effective system of credit risk management in commercial banks.

1.3 Structure of the study:

The following study consists of five separate chapters. In the first chapter we have engaged ourselves in the generalities of the research. Here we mention that establishing a comprehensive and effective system of credit risk management in the banks can play an important role both in creating tools and facilities, and also in reviewing and reestablishing existing mechanism of identification, and evaluation of credit risk management and control.

In this chapter we have also mentioned that the aim of this research is to give a clear definition of credit risk, and to establish a structure for designing an innovative system of credit risk management in commercial banks. In the second part of chapter one, we have also presented the research method and its framework, and in the end the policy implication will be derived from the results of the given research.

In the second chapter of the research, by reviewing the concepts of credit risk, we have mentioned the necessities and potential advantages of credit risk models. Then by reviewing the subject’s literature, we have explained the subjects such as expected loss, economic capital, the details of default, and exposure at default. As we continue the second chapter the concept of loss given default and the importance and methods of its model making have been described. In the same framework we have also explained the concept and method of estimating the recovering rate. subjects such as correlation, concentration, and diversification, the techniques of reducing credit risk have been stated.

In chapter three because of the importance of modeling in the present study, and forming the main part of this research, the methods and
models of credit risk management have been explained and defined separately in full details.

In chapter three, the credit risk modeling and structural approach and reduced form approaches have been explained in details. The second part of this chapter is allocated to the credit risk models which are also known as the commercial credit risk models. In this part, the concepts, details, model making and the application of four models: Creditportfolioview, creditrisk+, KMV, and CreditMetrics™ have been explained.

The fourth chapter of this research is about the details of the model presented by the researcher and the model making theories in addition to the related calculation and estimation for a commercial bank. The aim of such estimation is to present an applicable example for the model given. The fourth chapter consists of three separate parts, and at the same time related. These parts are credit scoring, exposure limits and capital requirements. As it has been explained at the beginning of the fourth chapter, the mentioned parts comprise a section of a comprehensive credit risk management system which has got interaction among them.

Finally in chapter five, we have presented a summary of all topics. In this research we have offered some policies to apply them into the commercial banks.

1.4 Methodology:

The present study consists of two main sections. First Section is related to the literature of the research which is covered on chapters two and three. The methodology for this part of research is the library study and many resources reviews which have been allocated in this regard have been introduced. The second section is related to the model designing. Here in order to design the model, we have tried to act as closely as possible to the Basel II committee’s view points. In order to calculate and estimate the proposed model which shapes the fourth chapter, there was a need for the real data of a commercial bank in which we have referred to 400 credit files of POST BANK OF IRAN. The needed data of exposure limits models have been gathered through the credit
units of this bank. The related data for the calculation of the capital requirements have also been gathered through main branches of the bank. The details of the methodology have been given in chapter four.

1.5 Policy implications:

The model presented in this research plus its result can be widely used in commercial banks, and it is also a comprehensive model for credit risk management.