# Enhancing the Consumer Credit Market in Algeria: With Special Reference to the Credit Card Market

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# Preface

It is widely recognized that divide in a country's level of socio-economic development results largely from disparity in knowledge. From this recognition, the Ministry of Finance and Economy (MOFE) of the Korean government has sponsored the Knowledge Sharing Program (KSP) since 2004. The KSP is designed to contribute to the socio-economic development of selected developing and transforming economies by sharing Korea's development experience and knowledge. Algeria was chosen as a target country for the 2006 KSP implemented by the KDI School of Public Policy and Management.

Through an extensive survey of the Algerian government ministries and agencies and substantial discussion between the KDI School and Algeria's Ministry of Finance (MOF), the KSP decided to tackle the issue of enhancing the Consumer Credit market in Algeria: With Special Reference to the Credit Card Market for Algeria. It includes five related topics- ① The Benefits of Establishing the Credit Card Market In Algeria, ② Proposals to Establish a Credit Card Payment Network in Algeria, ③ Credit Risk Management in the Credit Card Business: Algerian Perspective, ④ Regulations on Credit Card Business: Algerian Perspective, and ⑤ Tax and Non-Tax Measures for Enhancing the Usage of Credit Card as a Means of Transaction.

Upon this occasion of publishing the results of the KSP for Algeria, I would like to express my gratitude to project manager Prof. Chang Gyun Park and all the project consultants including Prof. Inseok Shin, Dr. Dongsoo Kang, Dr. Sukyun Hur, Prof. Janghyuk Lee, and Mr. Joonmo Na for all their hard work in successfully completing the KSP. I would also like to thank former Deputy Prime Minister Nyum Jin who served as Chairman of the KSP Steering Committee and other Committee members as well as Mr. Kwang Myung Ahn and other officials of the MOFE for their guidance and support. My sincere thanks go to all the Algerian officials who actively joined the project, particularly to Minister Karim Djoudii of the Algerian MOF who gave strong support to the project and valuable input at the high-level policy dialogue in July 2007. Lastly, I would also like to thank the members of the Center for Economic Cooperation of the KDI School for their dedication and support for the project.

I sincerely hope that the results of this project are able to contribute to the successful development of Enhancing the Consumer Credit market. The policy recommendations in this report, however, are based on Korean experiences and are solely the opinions and recommendations of the authors.

Jung Taik Hyun<br>
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# Executive Summary

## 1. Project Objectives

The research project aims to assess the feasibility of the credit card market in Algeria and devise policy recommendations for successful establishment of a sound and efficient credit card industry in the Algerian financial market.

## 2. Expected Benefits of the Project

If successfully launched by adopting the policy measures recommended by the project, the credit card market is expected to offer several benefits to various layers of the Algerian economy.

Most of all, proliferation of credit card use contributes to enhancing the efficiency of resource allocation by significantly reducing transaction costs and achieving a higher level of transparency.

Should the credit card market be successfully launched, the biggest winner is expected to be consumers who would be allowed to enjoy the opportunities of lower transaction costs and easier and faster access to credit resources. Merchants are also expected to be winners since they can benefit from a wider and more diverse customer base provided by widespread use of credit cards. Credit cards could be a very lucrative new financial product for Algerian financial institutions. The Algerian government is not an exception in the list of beneficiaries since it would be able to benefit from reduction of illicit transactions and corruption as well as broadening of the tax base.

## 3. Feasibility Assessment and Prospect

Recognizing the importance of hydrocarbon resources in the Algerian economy, we still rate Algeria as a relatively rich country among developing countries as well as Maghreb countries with per capita GDP 3,086USD in 2005. The position has been strengthened due to a strong performance of the Algerian economy since 2001 with average annual real GDP growth rate of 5%.

However, the financial sector has not been able to keep pace with development of the real sector. Insurance and securities sectors are still in the nascent stage. Though banking is a relatively well developed area offering essential services such as deposit taking and lending, the industry is undergoing a major restructuring process of privatization and clearing of non-performing loans. That forced the credit extended to the private sector by banks to be stagnant around 12% of GDP since 2001 in spite of a strong macroeconomic performance. Ironically, one can find a potentially extensive demand for development of the consumer credit market from such a lethargic development of the financial sector.

Extending loans to consumers without securing proper collateral is surely a quite foreign concept to the Algerian banking sector. For the present, the Algerian banking sector lacks essential ingredients to successfully establish a sound and efficient credit card market such as extensive accumulation of human capital and adequate infrastructure. Harmoniously orchestrated efforts from both the government and private sector should be made to overcome the difficulties and achieve a sound and efficient credit market.

Korea has succeeded in establishing a very strong credit card market starting from a barren ground for a consumer credit market. It was also a process of trial and error and the Korean economy went through a very traumatic experience during the Credit Card Crisis in 2003. Since the Korean credit card industry experienced both success and failure, we presume that the Korean case would be a good benchmark to refer to when we devise and recommend strategic plans to achieve a sound and efficient credit card market.

## 4. The Principles

The principle we have maintained throughout the project is to consider both the current status of the Algerian financial sector and Korean experience in the credit card industry and to devise an effective and practical roadmap to introduce credit cards into the Algerian economic system.

More specifically, a gradual approach is chosen as the first guiding rule. With the current status of the Algerian banking sector, it is quite impractical to introduce a fully-blown credit card market due to significant credit risk involved. Therefore, the project team recommends that the Algerian government and financial industry focus on achieving a strong and viable debit card market as a stepping stone to the credit card market. Knowledge from running debit card business will be an invaluable asset to attaining a sound and efficient credit card industry.

The next methodological principle taken by the project team is the sectoral approach. We divided the entire task into four distinguished parts; network infrastructure, credit information management, legal framework, and policy measures. Concrete policy recommendations will be offered for each layer in accordance with the timetable of the project.

# 5. Policy Recommendations

## 5. 1. Introduction of Developed Specialization Model

The current structure of the credit card industry in Algeria is a 4-party structure like the USA and European countries. One characteristic feature of the Algerian system is that the whole process is performed exclusively by SATIM and the structure has serious difficulties and limitations in providing operational assistance according to requests or needs of individual banks and in making the full use of feedback from banks to improve the system. It is necessary to open the market to new entrants and introduce competitive structure. One can expect that the competitive structure will bring faster development of the credit card industry and vitalization of sales and operations of individual banks, which is ultimately expected to bring a structural reform for credit card use in Algeria.

## 5.2. Establishment of neutral SATIM-centered integrated network

SATIM currently performs as an integrated network among the domestic issuers and acquirers. To enhance the level and quality of services provided by SATIM, it is recommended that a neutral network to which all merchants have access should be established making it possible for all credit card transactions to be processed by SATIM. Processing business such as issuing cards and supplying terminals currently carried out by SATIM should be established as a separate revenue-earning business unit so as to make them compete with other processors to enhance efficiency.

## 5.3. Expanding IT infrastructure

IT infrastructure should be expanded and modernized in order to achieve a full scale real-time authorization system. A comprehensive review of the current status of IT infrastructure and a thorough and concrete plan for improvement should be followed. In addition, utilizing professional assistance from foreign countries and adopting new technologies should be seriously considered to speed up the process - the detailed recommendations are presented in the main report.

### 5.4. Gradual Expansion of Credit Card Products

Considering the current stage of the Algerian credit card industry, the gradual expansion of credit card products should be pursued in accordance with the market environment and consumer demand. Debit cards should be considered as the first product to introduce and charge cards as a mid-term goal and finally credit cards with credit extension function as the ultimate goal.

### 5.5. Implementation of the current plan of Setting up a PCR

Algeria currently is in the process of setting up a PCR under the central bank, Bank of Algeria. The PCR is planned to collect positive and negative information from participating financial institutions that include all the credit providing institutions except insurance companies. Collected information is to be shared among participating institutions. We suggest that, as the first step to establishing a credit information reporting system, the plan of setting up the PCR should be implemented as planned. Further, in implementing the plan, due attention should be paid in order to maintain reliability. Collection and sharing of credit information on individuals may face opposition from the public unless the reliability of information and the fairness of information usage are trusted. The PCR should aim to gain public trust as well as construct credit reporting infra.

### 5.6. Establishing a Credit Bureau

The ultimate purpose of a credit reporting system is to provide a better infra for credit risk management of financial institutions. Circulation of credit information will bring about final benefits to a financial system only when it is accompanied by well-functioning credit risk measurement models which will make use of information available through the credit reporting system. A typical problem that a developing economy faces, which is relevant also for Algeria, is that neither a credit reporting system nor a credit risk measurement model exists. Considering this, in parallel to setting up a PCR, a plan to foster capacity of the Algerian financial system to develop credit risk measurement models should be prepared and executed. From the Korean experience as well as those of other advanced economies, development of credit risk measurement models is driven by credit bureaus. We suggest that Algeria should establish a credit bureau. Considering the current governance of the Algerian financial system, the credit bureau may be established either directly by the state as a public company or by banks under the guidance of the government.

## 5.7. Improving Internal Risk Management Capacity of Financial Institutions

Together with building up the hardware, it is important to improve software aspects of risk management in the financial system. First, human resources training is critical to the development of risk management capacity. Next, identifying and spreading best practices of risk management are equally important. We suggest that Bank of Algeria, which is in charge of setting-up a PCR, should prepare and implement a human resource plan, (re)training programs and a plan for spreading best practices.

## 5.8. Establishing the Principles of Prudential Regulations

Clear accounting principles for credit should be firmly established. Since cash advances are more likely to become delinquent and bad loans are less likely recovered vis-à-vis normal bank loans, their appropriate risks should be carefully assessed based on past history of pure credit-based lending and necessary adjustments. Next, firewalls between credit card accounts and ordinary bank accounts should also be made clear. Since credit card based lending tends to explode and plunge relative to an equilibrium level, or unduly over-react to business conditions, this volatile movement may affect bank soundness. This wag-the-dog situation should be carefully taken into account when designing regulations for credit card businesses.

## 5.9. Establishing the Conduct-of-Business Regulations

Securing various consumer protection measures should be one of the primary concerns.

Over-competition at the sacrifice of consumers' optimism, ignorance and boldness should be checked to protect expected consumers' welfare. Moreover, clear statements in a standardized contract between credit card providers and demanders should be prepared with legal clauses of judgment in favor of consumers in case of disputes.

Sound practices for delinquent debt recovery should also be regarded as an important requirement for successful introduction of credit cards. Various acts that threaten, intimidate and harass credit card users in relation to debt collection should be carefully filtered out. Sound practices for debt collection will help to not only protect already distressed individual's welfare but also to establish belief in the financial system.

## 5.10. Ensuring Efficient Use of Credit Information and Privacy Protection

The scope of credit information usage should be clearly settled. Fair balance between efficient use of credit information and privacy protection, due to their trade-off relationship, should be determined by high level decision makers with clear economic and legal objectives. In addition, data that do not infringe on consumers' privacy but help identify creditworthiness of borrowers should be set up throughout discussions among policymakers and practitioners and the necessary data accumulation efforts should be initiated by the government with the help of related institutions.

### 5.11. Encouraging Expense Payment by Corporate Card for Public Sector

Since the expense spending of the public sector accounts for a large proportion of the Algerian economy, it will create demands of critical mass that can attract merchants to equip themselves with card terminals to accommodate these demands. It may break through the chicken and egg problem of credit cards.

### 5.12. Concentrating on Business Categories of Frequent Purchase

In business categories of frequent purchase such as grocery shopping, restaurants, gas stations, the interaction effect between card usage among consumers and card terminal installation among merchants can be substantially larger than those of infrequent purchase such as travel or professional services (legal and financial).

### 5.13. Building Trust in the Tax Policy

In the early stage of credit card usage, merchants tend to be reluctant to install card terminals and accept payment by card as it reveals their income source to the national tax service, which can pose risk to merchants of paying higher corporate and income taxes than their colleagues who don't accept card payment. To minimize this risk, the national tax service should announce a road map to build trust in the tax policy and it has to contain incentive for merchants accepting card payment and penalties for those that don't. This road map can be effective if it is linked to tax incentives for card payments for individual consumers.

## 6. Time Table

Each of 13 policy recommendations prescribed by the research staff should be pursued separately or combined, according to the development of credit card industry in Algeria. Some of them should be pursued immediately. For other policies, the Algerian policy makers should wait until the developmental stage when the Algerian credit card industry warrants the pursuit of the policies.

Below is the time table the research staff suggests.

Time Table: What, When, By Whom?

| Policy prescription | Stage of Development | | | Tasks | Participating Bodies |
|---|---|---|---|---|---|
| | debit | charge | credit | | |
| 1. Establishment of Developed Specialization Model | | | | Maintain SATIM's role as a sole network operator allowing more processing service providers | Ministry of Finance |
| 2. Strengthen Integrated Network | | | | Extend SATIM network coverage | SATIM, Banks, Ministry of Finance |
| 3. Establishment of Real-time Authorization System | | | | Strengthen networks between bank's headquarter and branches Strengthen networks between SATIM and banks | SATIM, Banks |
| 4. Adoption of Advance Technology | | | | Adopt advanced tech | SATIM, Banks |
| 5. Implementation of the Current Plan of Setting-up a PCR | | | | Fulfill the current plan to establish Risk Center | Bank of Algeria |
| 6. Establishing a Credit Bureau | | | | Establish CB | Bank of Algeria, Ministry of Finance, Banks |
| 7. Improving Internal Risk Management Capacity of Financial Institutions | | | | Develop experts on risk management and best practice in risk management | Bank of Algeria, Ministry of Finance |
| 8. Establishing the Principles of Prudential Regulations | | | | Enact the law/rules for the prudential regulation of credit card business | Bank of Algeria |
| 9. Establishing the Conduct-of-Business Regulations | | | | Enact the law/rules for the Conduct-of-Business Regulations of credit card business | Bank of Algeria, Ministry of Finance |
| 10. Ensuring Efficient Use of Credit Information and Privacy Protection | | | | Enact the law/rules to protect of credit information and privacy | Bank of Algeria, Ministry of Finance |
| 11. Encouraging Expense Payment by Credit Card for Public Sector | | | | Require public sector expenditure made through credit cards | Ministry of Finance |
| 12. Providing Tax and Non-tax Incentives to Stimulate Credit Card Use | | | | Provide incentives in personal income tax, VAT, corporate income tax | Ministry of Finance |
| 13. Building Trust on Policy | | | | Announce the plan to cope with fraudulent use of credit card and credit cards related crimes Clarify policy time able | Ministry of Finance |

# Chapter 1

# Introduction

## Introduction

Algeria is Africa's second largest country next to Sudan and the tenth largest in the world with a total land mass of about 2.4 million square kilometers. It is also one of the most populous countries on the African continent with a population well over 30 million, most of whom live in the fertile region spanning the 1,200 kilometers of Mediterranean coastline called the Tell. Thanks to rich reserves of natural resources, Algeria is one of the richest countries in Africa, along with South Africa. The country has the eight-largest proven reserves of natural gas in the world and ranks fourteenth in oil reserves. Per capital income in 2004 was 2,596 US dollars and it has showed rapid economic growth since 2001.

However, it was not until 1995 that a market-based resource allocation system was cautiously experimented with when the privatization process began after 30 years of socialist regime. Moreover, the country regained political and social stability from 1999 when then newly-elected President Abdelaziz Bouteflika initiated the "Civil Harmony" project, which granted amnesty to 11,000 militants and reintegrated then into Algerian society. The project virtually put an end to the terrorist rebellion led by religious militia groups such as Islamic Salvation Front (FIS), which had plagued the country with incessant violence and claimed at least 150,000 civilian casualties and 30 billion US dollars in material damages.

The Algerian government has pursued economic development in close cooperation with international society, especially international organizations such as the European Union and World Bank. As part of an effort to establish a strong diplomatic and economic tie between the two countries, the Korean government proposed to the Algerian Government a co-operation program in strategies for economic development. The Knowledge Sharing Program (KSP), funded and hosted by the Ministry of Economy and Finance of Korea, is employed as the main vehicle through which specific ideas and proposals are exchanged to enhance the co-operation between the two countries.

Many observers argue that one of the biggest obstacles to economic development in Algeria is the backwardness of the financial sector. By connecting savers with investors, the financial sector plays a vital role in mobilizing credit resources and allocating the resources into the sectors that can utilize them most efficiently. Therefore, a well-functioning financial market is essential to strong economic development as well as efficient allocation of scarce credit resources. With most of the big banks owned by the government, the Algerian financial sector is still dominated by the public sector and the role of the private sector is very limited. As a natural consequence, most banks focus mobilization of credit resources to support state-directed economic development strategy. Except for small layers of mortgage loan and loans collateralized by expansive household appliances or valuables, the consumer credit market is still in the very early stage of the development process. Considering the recent surge of the economy and potential purchasing power, it is very likely that the consumer credit market in Algeria will show a robust development if adequate policy support is implemented.

It is well-known that proliferation of credit card use can bring various benefits to the economy. Two of them are improvement in efficiency that is made possible through lower transaction costs and better resource allocation and enhanced transparency that is achieved through uncovering the underground economy. Algeria would be no exception in the sense that it would be able to expect to enjoy the same benefits as Korea experienced should it succeed in establishing a strong and viable credit card market.

This project aims to suggest policy recommendations to help establish the credit card market in Algeria. The project team, consisting of experts from both Korea and Algeria will examine the current situation of the Algerian consumer credit market and formulate effective policy prescriptions to stimulate development of the credit card market. The lessons we learned from Korean experiences during the development of its credit card market will be fully utilized in the process.

This report consists of six chapters including the Introduction. The next chapter will discuss the need for a credit card market in Algeria. The next four chapters include discussion of four distinct aspects of the credit card industry; how to construct a payment and settlement system for credit cards in Algeria (chapter 3), how to design a credit information system in Algeria (chapter 4), what is to be done to formulate an effective and efficient regulatory/supervisory institution for the credit card industry in Algeria (chapter 5), and how to use various policy measures to stimulate the use of credit cards in Algeria (chapter 6).

# Chapter 2

# The Benefits of Establishing a Credit Card Market in Algeria

# Summary

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*Professor, Chung-Ang University*
*Joonmo Na*
*Director, BC Card*

The modern form of credit card was introduced in 1950 when Diners Club was established and issued cards to be used as an alternative payment method. Later, American Express started to issue credit cards in 1958 and by the time Bank of America issued a credit card named BankAmeriCard, the credit card industry was on track to fast and steady growth as a generally accepted alternative payment vehicle. The current form of industry structure was firmly established in the 1970's with the establishment of credit card associations such as Visa and MasterCard in an effort to overcome various forms of difficulties such as frequent occurrence of card fraud and inadequate and malfunctioning domestic networks, which in some sense were inevitable as the industry grew.

The Credit card market in the US and Europe has developed around two large credit card associations, Visa and MasterCard. With the two giant playing a central role in connecting financial institutions, merchants and consumers, participating banks were able to use a common network of authorization and settlement on a global scale. On the contrary, credit card markets in Korea and Japan have developed based on individual domestic networks. Under the system, each card issuer establishes its own credit card network and solicits merchants to participate in its own network. Foreign transactions are carried out by contracting with credit card associations in the global market such as Visa and MasterCard.

It is possible to group various kinds of payment cards into four different categories according to the scope and the length of credit extension to borrowers. They are pre-paid cards, debit cards, charge cards, and credit cards. Each category of payment card offers different eligibility and terms and conditions to serve diverse layers of consumer needs.

Cardholders, merchants, and credit card companies are the main players in the credit card industry and these three components are meticulously inter-connected by a credit card network to facilitate smooth functioning of the credit card system. Depending on the way market participants are organized, the credit card network can be divided into two distinct systems: 3-party system vs. 4-party system. A 3-party system consists of a credit card company, merchants,

and cardholders and each credit card company establishes its own network and does not share it with other credit card companies. On the other hand, a 4-party system consists of a card association, issuer, acquirer, merchants and cardholders. The roles played by credit card companies in a 3-party system are now specialized by three different bodies. A card association is the central command tower of the whole system and many participating financial institutions share the credit card network maintained by the card association.

One can summarize the various types of benefits from credit card use to different types of market participants as they increase in efficiency of resource allocation. Most of all, proliferation of credit card use contributes to enhancing the efficiency of resource allocation by significantly reducing transaction costs. Consumers are now not required to carry cash and merchants do not need to keep track of detailed transaction information by themselves. The government can also save a lot of resources that were spent on policies to induce higher level of tax compliance. Second, increased use of credit cards is most likely to result in significant welfare gain by alleviating liquidity constraints regarded to hamper efficient allocation of scarce credit resources. Third, as the range of transaction activities covered by credit cards expands, the overall efficiency of resource allocation gets enhanced. It is harder for illegitimate activities such as tax evasion and corruption related transactions to find shelter from the authorities. A shrinking underground economy in general implies a more transparent economic system and a more stable and predictable environment, which ultimately bring about efficiency gains in resource allocation and welfare gains that can be distributed to members of society.

The credit card market in Korea showed explosive growth from 2000-2003 when the violent market crash resulted in serious instability in the financial market. The Korean experience of success and serious side-effects in its credit card market offers many valuable implications to other developing countries trying to introduce a credit card industry.

The consumer credit market in Algeria shows a strong sign of growth centering on mortgage loans and loans collateralized with jewelry and high priced durable consumer products such as cars and home appliances. The biggest consumer credit market in Algeria is the mortgage loan market and the recent surge in mortgage loans can be attributable to strong activity in the housing market and housing construction boosted by the boom in the economy. Though small in size, loans collateralized by commercial properties and jewelry also constitute a part of the consumer credit market and banks are quite active in making loans for purchase of high priced consumer goods such as cars and home appliances.

However, consumer credit products that do not require collateral in some form do not exist in the Algerian consumer credit market. Credit cards are the most widely used financial products through which consumer credit is granted based on credit evaluation rather than collateral but their usage is still in the nascent stage in Algeria. A lack of indispensable infrastructure such as a credit evaluation system is said to be the main culprit for insufficient development of the consumer credit market in Algeria but various efforts are being made to establish a strong infrastructure for the consumer credit market.

Considering the current status of the overall economy and recent trends in the consumer credit market, we think that the potential demand for a wider range of consumer credit products such as credit cards exists on a considerable scale. A recent surge in automobile and durable consumer goods purchases represents the strong purchasing power of Algerian consumers and one can find a strong basis for demand for credit cards. Moreover, free from direct control by the government, banks are searching for a new business model to bring high profitability. It is natural that banks turn attention to a new and lucrative financial product, the credit card.

It is time that Algerian policy makers assess the feasibility and desirability of the credit card market and facilitate an institutional framework to help the credit card market become embedded into the financial market in Algeria without significant side-effects.

Considering the current situation of the consumer credit market in Algeria, it is unreasonable to attempt to introduce the credit card market immediately. The credit culture does not seem mature enough that creditors expect their property rights not to be infringed upon without due legal process. Infrastructures essential to successful functioning of the credit card market are not ready yet. A credit risk management system is still in its infancy and many years away from being applicable in practice. In order to avoid unnecessary trial and error, the Algerian authority is advised to pursue successful establishment of a debit card market instead of attempting to introduce a credit card market that demands much stronger infrastructure. Since transactions through debit cards, especially if on-line based, are not involved in credit extension, promotion of debit card use can bring various benefits of payment cards to the economy without fear of mounting consumer debt. While focusing on the promotion of the debit card market, the government should take actions to prepare for establishing the credit card market.

We believe that there are four layers of tasks that call for fundamentally different approaches in terms of expertise and resources; the strategy to establish a hardware system for the credit card network, the strategy to establish/strengthen the credit information system, the strategy to design legal and institutional arrangements to regulate the credit card industry, and the strategy to encourage debit/credit card use in everyday transactions. Although each layer requires different expertise and resources to successfully execute recommended strategic plans, needless to say, all layers of strategic plans should be fully integrated and harmonized to achieve the common ultimate objective.

The lessons we learned from Korean experiences should be fully utilized in designing the strategic plan to establish a strong and viable credit card market in Algeria. Since we often observe increased instability in financial markets when a new financial product is introduced in developing countries, particular attention should be paid to make sure that market participants as well as the regulatory authority are given enough time to adjust to the new product and the transition path of the market will not follow an explosive path that could lead to the formation of an unviable bubble in the financial market.

# 1. A Brief Introduction to Payment Cards

## 1.1. A Brief History of Credit Cards

### 1.1.1. The birth of the credit card

The term “Credit Card” was first used by Edward Bellami in his book “Long Backward” in 1888, calling the credit card a payment method other than money for consumer transactions. But it was not until 1894 when Hotel Credit Letter Company in America made it possible for their guests to pay hotel charges with credit that the credit card was actually used as an alternative means of payment.

Credit cards became a widely accepted means of purchases on credit in 1914 when General Petroleum Corporation of California first issued cards for oil sales on credit. And the primitive form of the credit card industry was completed by 1915 when small hotels, telephone companies and railroad companies issued coins and tokens to enable credit transactions.

### 1.1.2. Introduction of the modern style credit card and establishment of market base

The current form of a credit card was started when an American businessman Francis Mcnamara established Diners Club. That was intended to set up a general way of payment that did not require cash but one’s credit alone.

With the success of Diners Club, American Express, a travelers’ check company, started issuing credit cards in 1958. Furthermore, Bank of America, which would later play a major role in establishing Visa Card, also issued a credit card named BankAmeriCard. The credit card industry grew large enough for various card issuers to plunge into a fierce battle to secure a competitive edge by that time.

With the steady growth of market size in the U.S., the credit card industry was experiencing various difficulties such as frequent occurrence of card fraud and an inadequate and malfunctioning domestic network.

To overcome such obstacles, InterBank Card Association, the predecessor of MasterCard was established in 1966 as a joint venture specializing in credit card networks for all national banks in California. In 1970, National BankAmeriCard Inc., the predecessor of Visa Card was established by a group of banks that were issuing BankAmeriCard. The formation of two giant credit card associations was the starting point for the modern credit card industry.

### 1.1.3. Emergence of a global credit card network

InterBank Card Association (ICA) started a joint-network with Banco Nacional of Mexico in 1968 and further expanded to form a global credit card network covering both Europe and Japan. Subsequently, the network expanded to cover Africa and Australia as well in the late 1970s and changed its name to MasterCard 1980.

On the other hand, BankAmeriCard Inc. established IBANCO in 1974 to launch a global network base and renamed itself as Visa in 1976. The card association since then has grown to control more than 50% of market share in the global credit card market.

### 1.1.4. The development of the credit card industry in other countries

The earliest credit card, Diners Club, was introduced in 1954 to Europe and that sparked a boom in the credit card industry. Along with it, Barclays Bank of UK formed a partnership with BankAmeriCard to issue Barclay Cards around Europe and that provided momentum for fast growth of the credit card industry in European countries. The European market had become the second largest credit card market following the US market.

Diners Club Japan, the first credit card company in Japan, was founded in 1960 as a joint-venture between Fuji Bank and Public Transportation Corporation of Japan. In 1961, six leading Japanese banks including Sanwa Bank founded Japan Credit Bureau and started issuing JCB cards. In Korea, Shinsegea Department Store issued the first credit card, Shinsegae card, in 1969. That was essentially a charge card accepted by a small number of merchants inside the department store. However, the development of the credit card market on a full scale had to wait until 1982 when five leading commercial banks co-founded BC CARD and started to issue credit cards granting short term credit provision for purchases.

### 1.1.5. Two different paths

The credit card markets in the US and Europe developed around two large credit card associations, Visa and MasterCard. With the two giant playing a central role in connecting financial institutions, merchants and consumers, participating banks were able to use a common network for authorization and settlement on a global scale. On the contrary, credit card markets in Korea and Japan have developed based on individual domestic networks. Under the system, each card issuer establishes its own credit card network and solicits merchants to participate in its own network. Foreign transactions were carried out by contracting with credit card associations in the global market such as Visa and Master Card.

As a consequence, it was possible for the credit card industry in the US and Europe to benefit from a cost efficient global network by focusing on the brand names such as Visa and MasterCard. However, besides BC Card in Korea and JCB in Japan that offered a common network to member banks, every credit card issuer in both countries established and maintained independent credit card networks. Some critics argue that the closed credit card network in Korea and Japan resulted in excessive investment in credit card networks with consequently inefficient cost structure in both countries. Others argue that the credit card network system in Korea and Japan helped the credit card market grow very fast in the two countries by pointing out the fierce competition among credit card companies to secure more merchants to accept credit cards issued by them.

### 1.1.6. The current position of credit cards in the consumer credit market

Thanks to a consistent expansion since the 1950s, credit cards have become a major alternative payment method. Credit cards are accepted worldwide and enable more efficient and convenient payment.

According to a Nilson Report published in May 2006, it was estimated that the amount of worldwide credit card transactions had reached 6,477 trillion USD and the number of credit cards issued had reached 246.17 million. In the US, with the largest consumer credit market, the amount of credit card transactions had taken 40.1% of the total transactions and had become the most important alternative payment method, surpassing personal checks according to a Nilson Report published in December 2006.

In Korea, it was reported that 148 million credit cards had been issued by the end of 2006 and the transaction volume had reached 318.7 billion USD. The ratio of credit card usage in private consumption expenditure had risen to 41.6%. It can be safely argued that credit cards are now the most important means of alternative payment method in Korea, too.

## 1.2 Classification of Payment Cards

Payment cards have become the most important alternative to cash as a means of payment. It is possible to group various kinds of payment cards into four different categories according to the scope and the length of credit extension to borrowers. They are pre-paid card, debit card, charge card, and credit card. Each category of payment cards offers different eligibility and terms and conditions to serve diverse layers of consumer needs.

### 1.2.1. Pre-paid cards

A pre-paid card is a form of payment card that requires users to deposit a certain amount of money in advance and can be used to purchase goods and services in place of cash.

The main issuers of the cards are not financial institutions such as banks and finance companies but large scale merchants or retail chains that possess an extensive network of member shops. In most cases, pre-paid cards are issued in the form of gift cards. Since the payment is carried out even before purchase and overdraft is rarely allowed, no element of loan is involved in the pre-paid card and it is used solely as an alternative payment vehicle to cash.

### 1.2.2. Debit cards

In the case of debit cards, the payment is deducted from the deposit account the card user maintains with the card issuer. Therefore, the card is issued by an entity with which the card user holds a deposit account such as banks and money market funds.

Money is transferred from the user's account to the merchant's account when the purchase is completed. If the debit card is operated on an on-line basis, the transfer of funds is immediate. However, it takes two or three business days for funds to be transferred between accounts when the debit card is operated with signature-based technology. On-line based debit cards require a correct password to be entered at the point of sales. Only with the right password can authorization be successful with debit cards. On the other hand, signatures based debit cards, also called check cards, are approved by the cardholder making the same signature on the sales slip as the signature on the back of the card. Regardless of the different methods of approving identification, cardholders are paying for the purchases on the spot.

Since it is a basic operational principle that only transactions not exceeding the outstanding balance of the account are authorized and overdraft is allowed within a pre-arranged limit, loans from the card issuer toward the card user are not initiated with the on-line basis debit card system. Even with the signature based system, credit extension is limited for at most three business days until the claim from the merchant arrives and the funds are transferred. Depending on the type of account the card user maintains with the card issuer, the card user is charged a different type of fee for using the card. The merchant also pays interchange fees to financial institutions participating in the credit card network to cover the cost incurred during the transaction.

The use of debit cards proliferated very rapidly after debit card payment was affiliated with the credit card payment system that already had wide coverage around the world.

Properly designed and implemented, the debit card is the payment card with which developing countries replace cash transactions thanks to a relatively low burden of bearing credit risk on lending institutions.

### 1.2.3. Charge cards

With the charge card, card users are required to pay in full to the card issuer within a certain period after the receipt of periodic, in most cases, monthly statements. Therefore, the financial company bears credit risk for a short period from the transaction authorization to payment by the card user.

Most charge cards are issued and administered by independent financial institutions other than banks and sometimes offered by large scale merchants such as department stores and discount outlets with an extensive network of branches.

The revenue source consists of annual fees from card users and various fees from merchants. Financial institutions operating charge card systems maintain independent networks of participating merchants, i.e. accepting the charge cards, and payment and settlement system rather than joining an existing credit card network such as VISA or MasterCard. Limited acceptance due to the closed nature of the network results in degradation of competitive edge of charge cards in the payment card market.

### 1.2.4. Credit cards

With the charge card, card users can pay in full or part of the outstanding balance to the card issuer within a certain period after the receipt of a monthly statement. There are two different types of partial payment. One is installment service that requires repayment of a pre-arranged amount of money every month. The other is revolving service under which card users pay part of the total outstanding balance exceeding the minimum amount required by the card issuer.

When paid in full, credit cards function exactly like charge cards. However, partial repayment implies credit extension to card users from financial institutions that issued the credit cards. Most credit cards offer card users the opportunity to borrow directly from the card issuer through cash advance service as a supplementary service. Lending through cash advance service is not related to transactions of goods and services and outright cash lending to card holders. Lending generated by credit cards is most extensive in scope and size among the family of payment cards.

The most important players in the credit card industry are card associations such as VISA and MasterCard. Card associations are presiding over the credit card industry and make it possible for the whole system to work by setting up standards and protocols applied to all players in the market such as issuers, acquirers, and merchants. Since VISA and MasterCard maintain a global network of payment and settlement system, credit cards have become the most widely accepted alternative payment instrument and the most accessible vehicle for small size consumer credit.

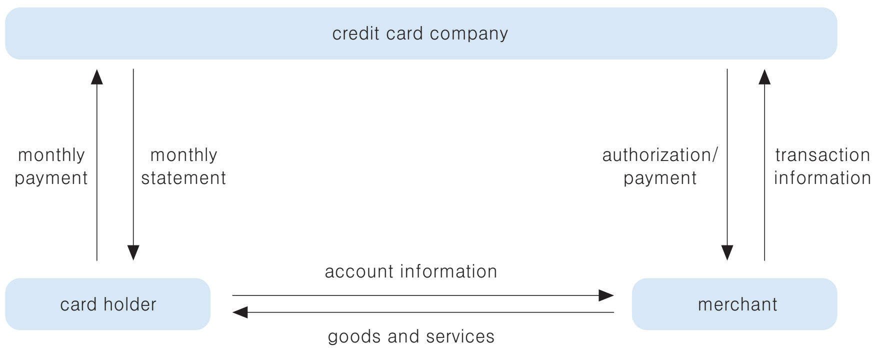
## 1.3. Credit Card Network and Players

Cardholders, merchants, and credit card companies are the main players in the credit card industry and these three components are meticulously inter-connected by a credit card network to facilitate smooth functioning of the credit card system. If any of these components are missing, one can safely presume that it would make credit cards less than they are supposed to be.

The first component in the credit card industry is a group of cardholders who agree to pay for purchases that have been made on a credit card according to the terms and conditions for the issuance and use of the credit card and in return receive the credit cards and use them to purchase goods and services or to get cash advance service. The second component is merchants that pay service fees for facilitating the transactions to credit card companies as set out in the contract upon merchant registration. The third component of the credit card industry is credit card companies. They issue credit cards to and sign contract with cardholders and merchants and enable merchants to accept credit cards for purchase of goods and services from the cardholders by granting authorization for each transaction. One can classify credit card companies into two categories; issuers and acquirers. The issuers are in charge of issuing credit cards to cardholders and authorizing transactions and the acquirers are responsible for recruiting merchants that are willing to participate in the credit card network and to accept credit cards issued by the issuers in the network. They are also responsible for controlling and managing networks and settlement of merchants' accounts.

All participants in the credit card industry are closely inter-connected by an ever growing credit card network. Currently, there are two distinguished types of credit card networks depending on how the participants in the industry are organized; single issuer model with three-party structure or multi issuer model with four-party structure.

Figure 2-1 ●● 3-party Model



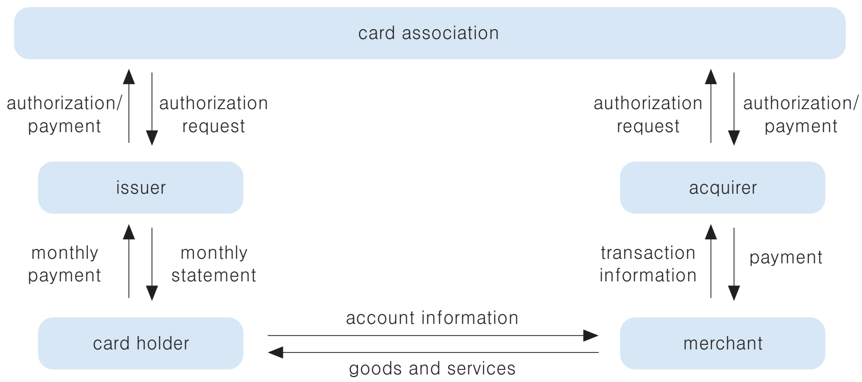

<Figure 2-1> illustrates the 3-party (single-issuer) model in which many merchants accept payments on a card issued by a single issuer. Upon the request for a transaction from a cardholder, the merchant sends information on the transaction including the customer account number, the transaction amount, and verification to the card issuer. With modern telecommunications and data processing technology, these steps are usually completed at the point of sale. Receiving the transaction information from the merchant, the card issuer determines whether to authorize the transaction based on the account information of the cardholder the issuer maintains. The transaction is completed upon the merchant's receiving the authorization from the issuer, which is also done promptly through telecommunication technology. The card issuer pays the merchant and sends a monthly statement to the cardholder listing all transactions that occurred during the statement period. The customer then pays the balance due, in whole or in part, based on the credit terms that were extended to the cardholder by the issuer.

Diners Card and Discovery card in the U.S. and credit card companies in Japan and South Korea adopted the single-issuer model. Even with its simple structure, the model has been criticized by many commentators because of the closed nature of the network and consequent inefficiency in network utilization. In the single issuer model, each credit card company should set up an independent credit card network and recruit merchants on its own without pre-arranged agreement for sharing of a single network among them.

<Figure 2-2> provides an elementary structure of the 4-party (multi issuers) model, in which the roles played by credit card companies in the single issuer model are divided into three different identities; card association, issuer, and acquirer. In this model, the card association

plays a crucial role by imposing rules for issuing cards, clearing and settling transactions, advertising and promoting the brand, authorizing transactions, assessing fees, and allocating revenues among transaction participants. In other words, the card association is both rule setter and presiding body for the network. Two card associations, VISA and MasterCard virtually divide between them the entire market that adopts a multi-issuer model. The issuers issue credit cards after evaluating applicants' creditworthiness and maintain information on transactions from cardholders' viewpoint. The acquirers maintain information on transactions from merchants' viewpoint to provide clearing and settlement service to member merchants. The roles of issuers and acquirers are mainly played by banks and specialized credit card companies.

Figure 2-2 ●● 4-party Model




<Figure 2-2> shows the typical flow of information and funds for a credit card purchase. The process begins when the cardholder presents the credit card to the merchant to purchase goods or services. The merchant, then, transmits to the acquiring bank the transaction information such as cardholder's account number and the amount of the transaction. The acquirer forwards this information to the card association that again relays the information and requests authorization for the transaction to the issuer. Depending on the status of the cardholder's account, the issuer responds with authorization or denial through the card association to the acquirer and then to the merchant to complete the transaction. Upon approval of the transaction, the issuer also sends to the acquirer, via the network, the transaction amount less an interchange fee that is established by the card association. The acquirer, after subtracting its own service fee, passes the payment on to the merchant.

The issuer bills the cardholder for the full amount of the purchase on a regular basis and receives payment from the cardholder. The card association also receives a small fee, usually around 5 basis points, for each transaction.

## 1.4. Costs and Benefits of Credit Cards

### 1.4.1. Cardholders (consumers)

Cardholders acquire goods and services by presenting credit cards to merchants and transactions are aggregated by issuers and payment is made to them periodically.

The convenience of making purchases without carrying cash is the biggest advantage of credit card use. An equally important but often neglected benefit of credit card use is that credit cards enable cardholders to achieve easier and cheaper inter-temporal consumption smoothing by alleviating liquidity constraint. The increase in consumer welfare through swifter consumption smoothing is not easy to measure but many commentators agree that the importance of welfare gain should not be neglected.

Cardholders are liable for the debt provided by issuers for credit card purchases and cash advance services. Credit card debt includes interest charge and various fees as well as the principal.

### 1.4.2. Merchants

A merchant provides goods and services when a buyer requests the transactions by presenting a credit card and the issuer grants authorization for the transaction. The most important benefit merchants expect to receive by participating in the credit card network is that they are able to access a large number of consumers that are not available unless they participate. It is also possible for merchants to transfer to the issuing company credit risk stemming from trade credit that is normally offered by merchants themselves without participating in the credit card network.

On the other hand, merchants are required to pay interchange fees that are the main source of revenue for issuers and acquires as well as credit associations. Possible loss of consumer loyalty and marketing information could be added to the additional cost of switching from cash based transactions to credit card based ones.

## 1.4.3. Financial institutions

### *1.4.3.1. Card associations*

The card association establishes rules, standards, and protocols governing all transactions and participants in the network as well as promotes the brand. Therefore, the card association bears costs in marketing the brand, maintaining the network, and enforcing the rules and standards. The main source of revenue is the fees the card association charges for every transaction.

### *1.4.3.2. Issuers*

Issuers, first of all, issue credit cards to applicants with adequate ability to repay and authorize the transactions initiated by the cardholders. They also send monthly statements and collect payments from the cardholders. Issuers assume the costs of maintaining the operation and bear credit risk and fraud risk. Credit risk originating from credit extension to cardholders to complete transactions without cash is transferred from merchants to issuers as long as cardholders' accounts are not cleared. Issuers are also responsible for losses from fraudulent use of credit cards by both legitimate cardholders and illegitimate card users.

On the positive side, issuers can secure firm ground for a very profitable business model that enables them to charge interest fees on unpaid balances and annual fees on maintaining member status. Moreover, issuers also share interchange fees from merchants with card associations and acquirers. Aside from various financial benefits, issuers can accumulate invaluable information on cardholders' transaction patterns and financial status that can be diverted to lucrative business activities other than credit card business.

### *1.4.3.3. Acquirers*

The most important role the acquirers play is to relay payment for sales from issuers to merchants and route information enabling authorization by issuers. Acquirers bear the costs of maintaining the network. They share interchange fees from merchants with issuers.

### *1.4.4. The government*

Widespread use of credit cards also benefits the government by broadening the tax base. Habitual practices of under-reporting or non-reporting of transactions, especially prevalent in developing countries, will significantly decrease as credit cards become the dominant form of payment. It is virtually impossible for merchants to conceal their business activities and try to evade legitimate tax bills. As transactions through credit card use spread across various layers of economic activities, more transactions that were not previously reported are captured by the tax authority and consequently the government will be able to enjoy the benefit of a broader tax base.

However, it is the prospect of increased tax burden that sometimes invites strong resistance from merchants against the policies to stimulate wider use of credit cards in developing countries where the underground economy occupies a significant position in the economy. The government is often required to commit significant resources to overcome the resistance and firmly establish the custom of making transactions using credit cards.

### *1.4.5. The economy as a whole*

One can summarize various benefits to different market participants from credit card use with the increase in efficiency of resource allocation.

Most of all, proliferation of credit card use contributes to enhancing the efficiency of resource allocation by significantly reducing transaction costs. Consumers are now not required to carry cash and merchants do not need to keep track of detailed transaction information by themselves. The government can also save a lot of resources that were spent on policies to induce a higher level of tax compliance.

Second, increased use of credit cards is most likely to result in significant welfare gain by alleviating liquidity constraint, which is regarded to hamper efficient allocation of scarce credit resources.

Third, as the range of transaction activities covered by credit cards expands, the overall efficiency of resource allocation is enhanced. It is harder for illegitimate activities such as tax evasion and corruption related transactions to find shelters from the authorities. A shrinking underground economy in general implies a more transparent economic system and more stable and predictable environment, which ultimately bring about efficiency gains in resource allocation and welfare gain that can be distributed to members of the society.

# 2. Credit Card Industry in Korea: Growth and Crisis

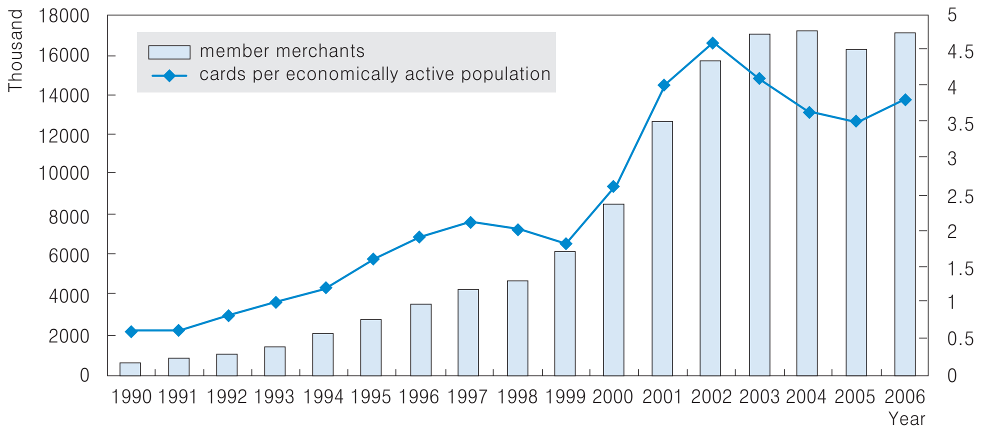
## 2.1. Development of the Credit Card Industry in Korea

Credit card use in Korea started to expand rapidly in the mid 1990s. The number of merchants accepting credit cards increased rapidly from less than one million merchants in 1992 to 12.6 million in 2001 and has been hovering around 17 million since then. The average number of credit cards a member of the economically active population in Korea possesses has also shown explosive growth from one credit card in 1993 to two cards in 1998. It peaked at 4.6 cards per EAP in 2002.

The amount of transactions through credit card intermediaries and outstanding balances have shown even more surprising pace of growth in the credit card industry, especially after 2000. Total unpaid credit card debt outstanding stood around 10 trillion Korean Won until 2000 when the use of credit cards started to accelerate to full throttle. This alarming trend is thought to be attributable to steady expansion of credit card acceptance by merchants since the early 1990s and de-regulation of the credit card industry which occurred after the economic crisis in 1997.

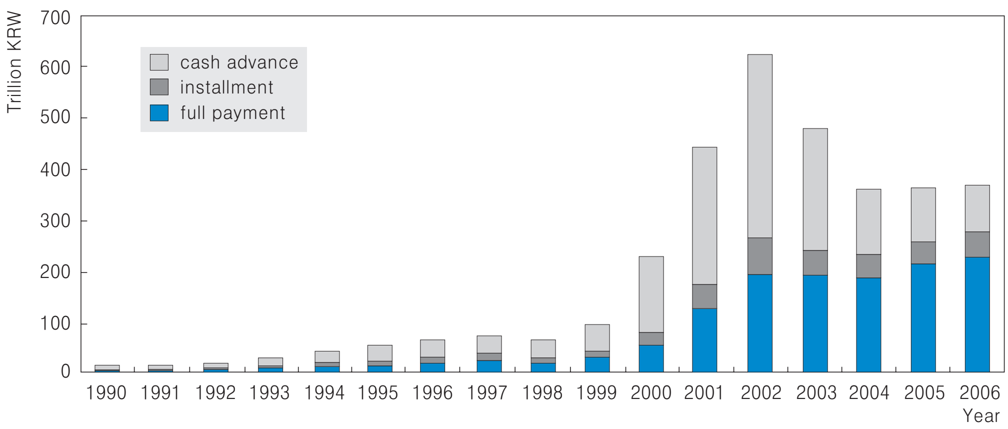
The rapid increase in credit card use itself was a precursor of a violent crash later in 2003. The most noticeable hint of the problematic aspect of the rapid expansion is the fact that the accumulation of credit card debt was primarily driven by explosive growth of cash advance services. As a supplementary service to cardholders, cash advance service is in general known to be more vulnerable to credit risk than other credit card services such as installment service and full repayment service. In 2002, just before the crash of credit card industry, the proportion of transactions initiated by cash advance service reached 57% of total transaction services through credit cards. That is a definite sign of potential problems and any careful observer would raise a red flag without much hesitation.

Figure 2-3 ●● Development of the Credit Card Industry in Korea



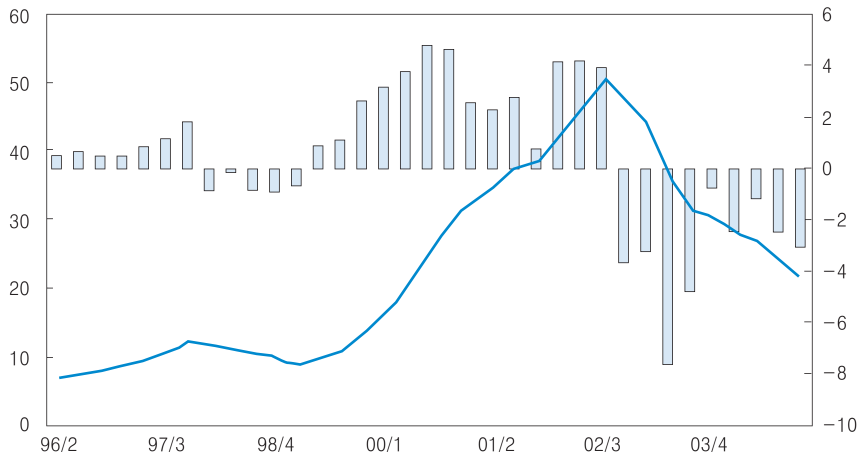

Source: Financial Supervisory Services

Figure 2-4 ●● Transaction Volumes by Service Type




Source: Credit Finance Association of Korea

Figure 2-5 ●● Outstanding Balance of Credit Card Debt




Note: 1. The bar chart indicates quarter-to-quarter change in outstanding balance and should be read by the scale in the right hand side.
2. The line graph indicates the outstanding balance at the end of each quarter and should be read by the scale on the left hand side.
3. All scales are in trillion Korean Won.

Source: FSS

The rapid expansion of credit card debt resulted in a violent hard landing in the fourth quarter of 2002 when financial regulators took dramatic measures to curb the almost uncontrollable pace of credit expansion.

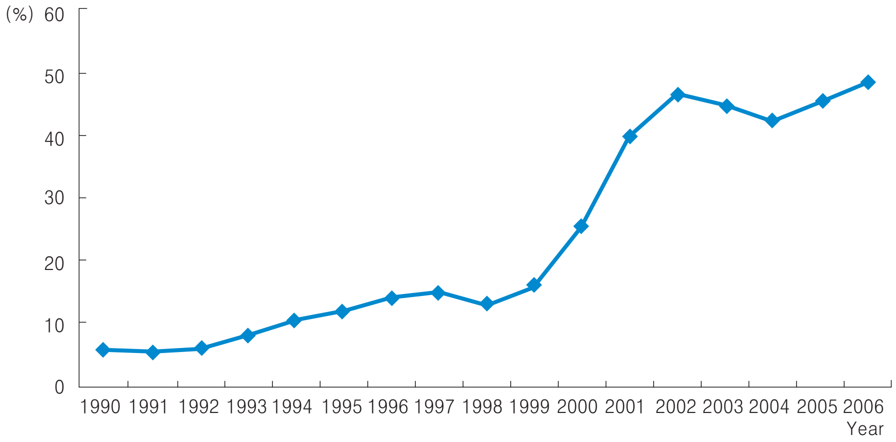
With growing concern about the prudential aspect of credit card debt, financial regulators suddenly changed their attitude toward the industry and imposed various regulatory actions. The objective of regulatory measures taken was to restore stability in the credit card market and to avoid realization of system risk in the financial market. More specifically, policy measures such as imposition of a ceiling on the proportion of cash advance service, introduction of prompt corrective action on credit card companies, and strengthening the standard of provisions for bad debt were the most noticeable supervisory actions taken.

One cannot raise a question as to the necessity of those policy measures to restore stability in the market but the timing and strength of regulatory interventions invited strong criticism from both the market and expert commentators. Already having deep trouble in repaying monthly bills, a significant portion of credit card debtors managed to avoid falling into arrears by financing new debt from other credit card companies or the usurious private loan market. Sudden strengthening of regulatory measures and subsequent tightening of credit risk management by credit card companies resulted in rapid increase in arrears and decrease in credit card debts.

Consequently, the number of credit delinquents recorded at the public registry soared by more than 50% in a year. Many observers claim that the regulatory authority should have been able to avoid such a violent crash landing with more meticulous choice of timing and intensity of policy execution.

The use of credit cards has become common practice so that about a half of total private consumption expenditure is intermediated by credit cards. The role of credit cards in consumer expenditure had not been significant until 2000 with less than 20% of private consumption expenditure executed through credit cards. Considering the fact that small transactions are typically carried out by cash, most large transactions in which credit cards have an advantage in terms of transaction cost are intermediated by credit cards in Korea.

Figure 2-6 ●● Private Consumption Expenditure through Credit Cards




Source: Credit Finance Association of Korea

## 2.2. How did it happens?

One can find the fundamental driving force behind the explosive growth of the credit card industry after 2000 when the liberalization and deregulation of financial markets accelerated after the economic crisis in 1997. Reform after the economic crisis was not limited to the financial sector but extended to other parts of the economy such as the public sector, labor market, and corporate governance. The principle the reform was based on can be summarized as enhancing the efficiency of the economic system by putting much emphasis on private initiative and market mechanism. The reform was particularly swift and successful in the financial sector. Financial liberalization had been promoted even before the economic crisis but, needless to say, the measures taken after the crisis brought fundamental changes to the financial sector.

The reform of the financial sector resulted in spectacular change, especially in the consumer credit market. The guiding rule of credit resource allocation changed from state discretion to price signal from the market. During the process of economic development, the government maintained a tight grip on credit resource allocation that was extremely scarce with poor capital accumulation in the early stage of economic development. The government selected several industrial sectors strategically and directed credit resources into those sectors and the terms of loans were very preferential. As a consequence, an awkward situation continued until substantial deregulation of the financial sector took effect, under which interest rates on loans to the corporate sector had been consistently lower than those charged on consumer loans even if the default rate on consumer loans had been much lower than the default rate on corporate loans. Abandonment of this interventionalist approach to the financial sector helped to restore the principle of market-based resource allocation in the financial sector and financial resources started to pour into the consumer credit market. The main financial instruments through which the consumer credit market in Korea expanded its realm were mortgage loans and credit card loans.

Various efforts by the government to stimulate credit card use also contributed to rapid growth of the credit card market. The government granted various tax benefits to both cardholders and merchants. Cardholders were allowed to claim part of total credit card purchases as a deduction from their income tax base and merchants got preferential treatment in both value-added tax and personal income tax, if applicable according to the proportion of transactions by credit cards out of total sales reported. The Korean tax authority also provided various non-pecuniary incentives in tax administration to help merchants who were willing to accept credit cards save costs related to tax compliance such as waiver of periodic tax inspection. In addition, very strong punishments were imposed on merchants who refused to accept credit cards.

Many experts point out the removal of the ceiling on the universal limit of cash advance service as one of the most important and direct policy measures that led to growth of the credit card industry and accumulation of credit card debt at an unprecedented pace.

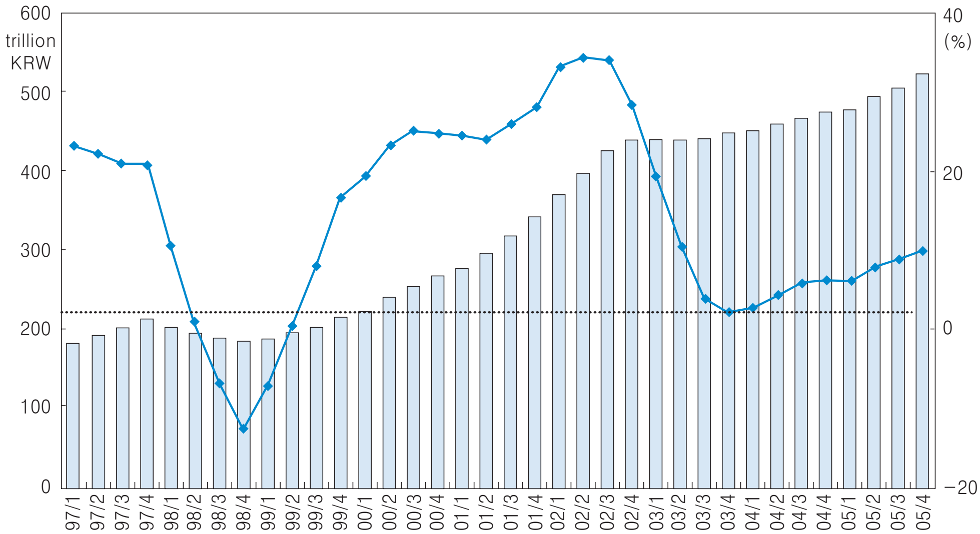
## 2.3. The Consequences of Explosive Growth of Credit Card Debts

The growth of the credit card industry after 2000 resulted in various benefits we expected from the expansion of credit card use; increased consumer benefit, enhanced efficiency in resource allocation, and improved transparency. Almost half of the private consumption expenditure is executed through credit cards, which implies enormous reduction in transaction costs. Moreover, allocation of scarce credit resources are achieved in a more efficient way according to price signals from the market and channeling credit resources into the consumer sector resulted in alleviation of liquidity constraint which had hampered inter-temporal substitution of consumptions. That is another big source of welfare gain. Significant reduction in tax evasion, which especially plagued the retail sector, offers a springboard from which the transparency of the economic system can jump to a higher level.

However, the growth of the credit card industry at an unprecedented pace also brought serious side-effects that many think were preventable if the regulatory authority had taken proper steps when the signs of problems in credit card debt had been noticed.

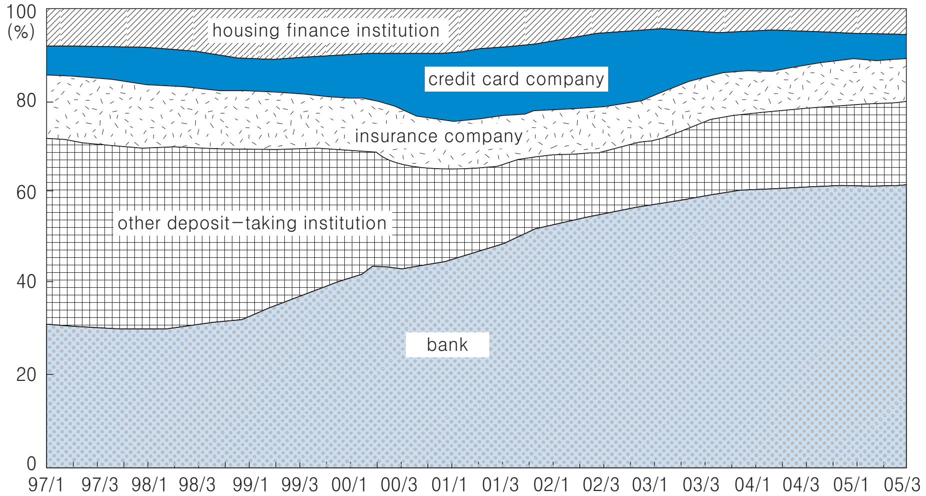
While showing signs of stabilization recently, household debt in Korea has grown significantly since the economic recovery following the economic crisis in 1997. According to <Figure 2-7>, there seem to exist three distinguished phases in development of the household debt market in Korea since the crisis. The first phase is the pre-boom period before 2000. The unpaid household debt that had shown very strong growth in response to a robust economy was hit hard by the crisis and decreased during the severe subsequent depression in 1998. It was not until 2000 that the slumping household debt fully recovered back to pre-crisis level and gained momentum for explosive growth for the next three years that constitute the second phase. During the boom period between 2000 and 2002, the average annual growth rate of household debt was 27.1%, which significantly exceeded the average income growth rate of 5% during the period.

Figure 2-7 ●● Household Debt in Korea: 1997 ~ 2005




Note: Growth rate is the yearly percentage change from the same quarter of the previous year.
Source: Bank of Korea

Figure 2-8 ●● Composition of Household Debt by Lender Type

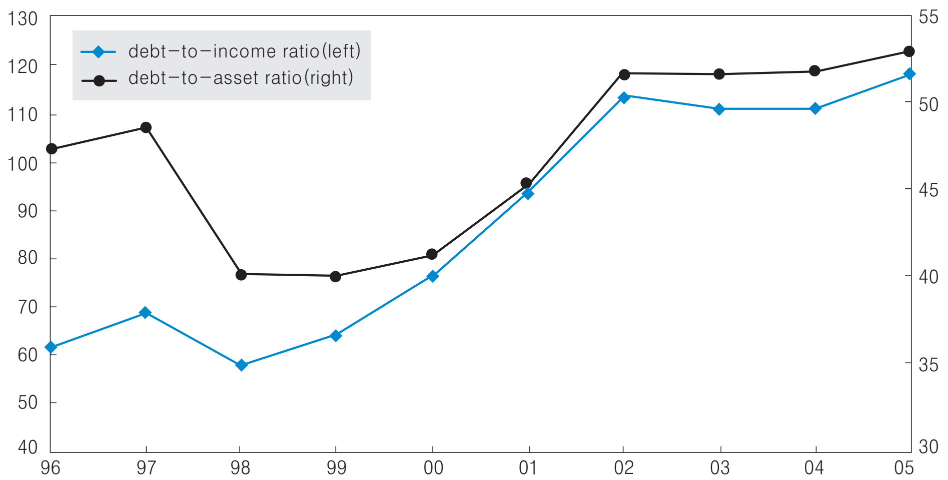



Note: 1. Housing finance institution includes Korea Housing Finance Corporation and National Housing Fund.
2. Other deposit-taking institutions include savings bank, credit unions and mutual saving cooperatives.
Source: Bank of Korea

Banks and credit card companies led the trend. Bank's weight in lender composition jumped by 17% points from 1999 to 2002 and continued to increase to reach 62% at the end of 2005. The proportion of credit card companies fluctuated severely. Loans extended by credit card companies constituted only 8.4% of the total household debt at the end of 1999 but explosive increase during the next three years pushed the weight up to 16.25% in the third quarter of 2003. Increases in arrears and drastically tightened regulatory responses forced credit card companies to take measures to curb loan growth and consequently the proportion of household loans by credit card companies shrunk to reach less than 5% at the end of 2005.

As a result of rapid increase in household debt, the main indicators for households' ability to repay significantly deteriorated. For example, debt-to-income ratio[1] increased by 49.4% points from 63.8% at the end of 1999 to 113.3% in 2002. And debt-to-asset ratio,[2] an ultimate indicator for solvency of indebted households rose considerably from 40.1% at the end of 1999 to 51.8% in 2002. Rapid growth in household debt posed serious concern about the soundness and sustainability from both the regulatory body and the market. Banks and credit card companies started to tighten the credit screening process to curb additional credit supply to the household sector.

Figure 2-9 ●● Trend in Ability-to-repay Indicators

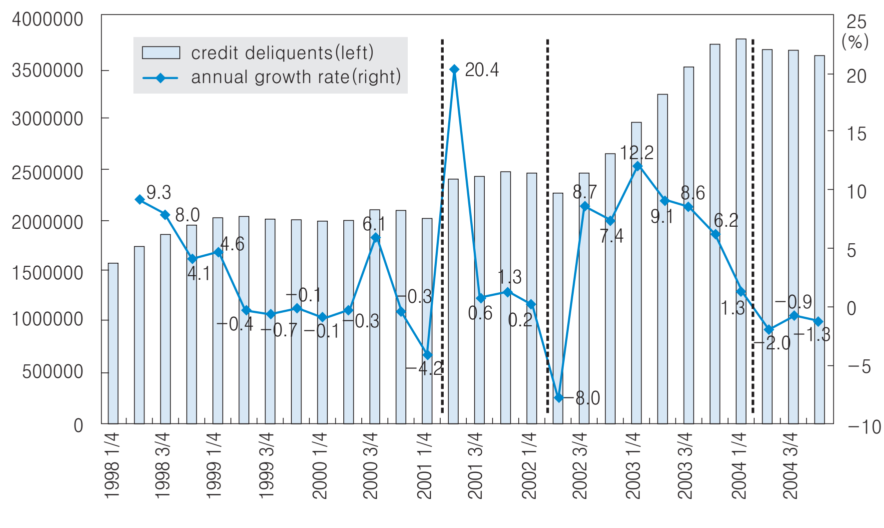



Note: 1. Debt-to-income ratio is the ratio between household debt and household disposable income.
2. Debt-to-asset ratio is the ratio between individual debt and asset in Flow of Funds Table.
Source: Bank of Korea

Alarmed by unprecedented loan increases, the regulatory authority also took various measures to control the household debt and sustain the stability of the financial system. As a result of harmonized efforts, though somewhat hurried, the explosive accumulation of credit card debts and fast deterioration of individuals' ability to repay debts had come to a halt. From 2003, the annual growth rate of household debt stayed below 8%, which is widely believed to be sustainable from a long term perspective.

The explosive increase in household debt led by credit card loans and subsequent deterioration in households' ability to repay resulted in a rapid increase in household arrears and credit delinquents. A person who is in arrears for an amount larger than 0.3 million Korean Won[3] longer than 3 months is recorded as a credit delinquent at the public registry. The number of credit delinquents started to rise considerably from 2003 and kept increasing to hit historic a high in the first quarter of 2004 with more than 3.5million total credit delinquents.

Figure 2-10 ●● Trend in Credit Delinquents




Source: Korea Federation of Banks

1 _ The measure is defined as the ratio between total household debt and national disposable income for households and private unincorporated enterprises.
2 _ It is defined as the ratio between total individual debt and total individual assets in the Flow of Funds table published by the Bank of Korea. The individual sector in the table includes private unincorporated enterprises and various non-profit organizations as well as households. Therefore, household debt in <Figure 2-1> does not coincide with individual debt in the Flow of Funds table. The change of basis is unavoidable since information on aggregate asset holdings by households is not available.
3 _ The sum is equivalent to approximately 300 US dollars.

As a natural consequence of increased arrears on a mass scale, the credit card industry ran into deep trouble. Profitability of credit card companies had deteriorated and market watchers had raised serious doubts about the viability of the credit card industry. The bond market reacted to the concern very violently. Prices of bonds issued by credit card companies plummeted dramatically and it was virtually impossible for credit card companies to sell new issues for rollover of maturing issues. The evaporation of liquidity for bonds issued by credit card companies pushed the entire credit card industry to the verge of bankruptcy. The biggest credit card company, LG Card, fell into the position of de facto bankruptcy and creditors took over the operation of the company. The situation of other credit card companies, independent or affiliated with banks, was not as urgent as LG Card, but they still had a lot of difficulties so that most of them were focusing on securing liquidity necessary for daily operations.

In principle, bankruptcy of a credit card company does not call for government intervention, especially from a regulatory perspective. Loans by credit card companies are not based on the deposits collected from the public with guarantee of the principal but on the capital invested by shareholders or the liability financed by issuing bonds in the capital market. Therefore, it is rarely the case that the default of a credit card company raises concern for systemic crisis. It is the unique financing structure of credit card companies that invited urgent intervention from the financial regulator. Credit card companies in Korea are allowed to issue bonds for as much as 10 times the capital in order to finance loans and most of the bonds issued by credit card companies were held by banks and investment trust companies that are constantly exposed to systemic risk. Default of bonds issued by credit card companies could have done significant damage to those financial institutions, which could have initiated bank runs as well as fund runs with catastrophic consequences. Concerned by the possibility that bankruptcy of credit card companies could lead to instability of the financial system, the regulatory authority intervened and orchestrated a bail-out scheme for LG Card rather than let the company go into bankruptcy.

## 2.4. The Lessons

One can point out inadequate production and circulation of credit information on debtors as one of the most important contributing factors to the seriousness of the crisis. Until recently, the public registry for credit information operated by Korean Federation of Banks (KFB) was the only institution through which credit information was produced and circulated. The information complied by the public credit bureau operated by KFB was limited mainly to negative information such as payment delay, default, and financial fraud. Only a fraction of positive credit information essential to efficient credit evaluation was included in the KFB database and it was not until 2003 that circulation of positive credit information started.

Literature on the role of credit information emphasizes the importance of positive credit information in accurate evaluation of creditworthiness of debtors. Credit card companies made loan decisions based on a limited range of positive credit information along with negative credit information and saw bad debts surge dramatically. To make matters worse, they did not fully utilize credit information at their disposal, let alone share information. Their utmost concern until signs of the crisis emerged was not profitability or soundness of their debt portfolios but maximization of market share. Credit card companies were so obsessed with market share that they, in effect, disregarded basic principals of credit risk management. Consumers with inadequate creditworthiness such as juveniles were offered credit cards in indiscriminate fashion and higher credit lines were allowed even to cardholders whose ability to repay was highly doubtful.

The first lesson we learned from the episode is that the system to facilitate production and circulation of credit information is an essential element to achieve efficient allocation of credit resources and expansion of the consumer credit market without an appropriate system for credit information can do more harm than good.

Inappropriate policy responses contributed to serious deterioration of the situation, if not directly causing the crisis. Confronted with faltering credit card companies and the possibility of an economy-wide crisis, the financial regulators took drastic measures to curb explosive growth of credit card debts. Many commentators criticized those policy measures as too excessive and said the Korean economy could have avoided such a violent consequence with more careful maneuvering of various policy measures. Moreover, the financial regulators missed several opportunities to prevent the crisis from materializing.

The rapid increase in transaction volume and the stock of unpaid debt itself was a hint of trouble but the financial regulators did not take any particular step other than the ordinary supervisory routine. Prudential indicators of credit card companies started to deteriorate from 2002 but no supervisory step other than verbal warning was taken. It was not until concerns for the viability of credit card companies were raised by the market that the regulators suddenly changed their position and flooded the credit card industry with strong omni-directional measures in a very short period. The credit card crisis in 2003 could have been averted with more meticulous and timely supervisory responses.

# 3. Strategies for a Strong and Stable Credit Card Market in Algeria

## 3.1. Overview of the Consumer Credit Market in Algeria

### 3.1.1. Financial market environment

#### *3.1.1.1. Aggregate monetary indexes*

In spite of persistent and growing surplus of current accounts, aggregate monetary indexes in Algeria show a trend of stable growth due to the sterilization policy strongly advocated by Bank of Algeria. Aside from a temporary spike in 2004 when it increased by 32.5%, M1 had shown a stable annual growth rate around 15% in the first half of the 2000s and the annual growth rate of M1 during the same period had stayed around 10%~20%. The proportion of cash held by the public among M1 had hovered around 40%, which indicates a strong preference for cash holding by the Algerian public.

Bank of Algeria has been successful in managing the quantity of money in the domestic market amid persistent pressure for monetary expansion stemming from the foreign sector. The sterilization policy was carried out by acquiring foreign assets. The policy resulted in higher than 30% annual growth of foreign assets held by Bank of Algeria.

#### *3.1.1.2. Interest rates*

Depending on the maturity, interest rates in Algeria are relatively low, around 0.4%~4.5%, and the spread between long-term and short-term loans widened to 350 basis points recently.

In 2005, the yield on Treasury bonds was formed around 0.41%~0.62% for bonds with maturities less than a year and 2.68%~2.95% for bonds with maturities between a year and two years, and 4%~4.5% for bonds with maturities longer than 5 years. Considering the fact that the inflation rate was 1.6% in 2005, the short term interest rate was, in fact, negative and this phenomenon continued since 2003. The term premium for Treasury bonds between six-month maturity and five-year maturity had been fluctuating between 100 basis points and 200 basis points and was widened to 350 basis points in 2005.

The average interest rate was 1.25%~2.5% for deposits and 5.5%~9% for lending by commercial banks in 2005. The interest margin was significant and had been expanded persistently. Though both deposit and lending rates were on a declining trend in the 2000s, the decline in the deposit rate was faster that that of the lending rate, which brought the average interest margin to 5.5% in 2005 from 3.5% in 2001.

Bank of Algeria has been vigorously pursuing a low interest rate policy to stimulate private investment.

#### *3.1.1.3. Balance sheet of the central bank*

Since the federal government deposits revenue from export of carbohydrate resources in the central bank (Bank of Algeria) and the central bank acquires foreign assets using funds raised by federal government deposits, the composition and fluctuation of asset holdings of Bank of Algeria is closely linked to the handling and amount of revenue from carbohydrate resources.

The closely harmonized policy is known to be pursued to avoid a large increase in the quantity of money in the domestic market and achieve stable price levels. As a result of the policy, domestic assets held by Bank of Algeria fall well short of domestic liability and the gap is made up for by large holdings of foreign assets.

### 3.1.2. Banking sector

#### *3.1.2.1. Industrial organization of the banking sector*

As of the end of 2005, the Algerian banking sector consists of seven state-owned banks and 24 private banks. All seven state-owned banks[4] ranked among the top ten large banks in terms of asset size and dominate the banking industry in Algeria. Arab banking Cooperation Algérie (ABC), Citibank, Caisse Mutualité Agricole (CNMA) are big private banks.

The majority of foreign banks having a presence in the Algerian banking sector are from France or Arabic countries but their roles are limited due to various economic and political reasons. Algerie Poste is also taking deposits from the general public and maintains a nationwide network of branches. Even though it is not allowed to lend, Algerie Poste holds a strong position in the market for consumer banking.

There are 1,270 branches nationwide and most of them are located along the populous Mediterranean coast area. Approximately 1,000 of them are affiliated with state-owned banks.

4 _ They are; Banque Extérirure d'Algérie(BEA), Bank Nationale d'Algérie(BNA), Banque de l'Agriculture et du Développment Rural(BADR), Banque de Développment Local(BDL), Crédit Populaire d'Algérie(CPA), Caisse Nationale d'Épargne et de Prévoyance(CNEP), Banque Algérienne de Développment(BAD).

#### *3.1.2.2. Banking service*

The main services provided by banks are deposit taking and lending. Payment and settlement service and payment guarantee are also important financial services banks provide. All of the state-owned banks were established to achieve a specific purpose. One can easily infer the mission of each state-owned bank from its name. Before the liberalization of the banking sector in 1990, the business of state-owned banks was limited to the realm of achieving the mission of each bank. For example, BEA specialized in foreign currency business and BADR specialized in financial services related to agricultural sector, while CNEP focused on mortgage loans.

The liberalization of the banking sector in 1990 abolished the restriction on business areas for state-owned banks and they were allowed to provide a complete range of financial services offered by commercial banks. Competition among state-owned banks is not a strange phenomenon in Algeria anymore. However, the expertise of each state-owned bank is still intact and each holds a strong position in its respective area.

#### *3.1.2.3. Competition in the banking industry*

Competition among banks is carried out to a significant degree since the banking sector liberalization in 1990. The abolition of state monopoly of banks and specialized banking system invited active competition among state-owned banks and newly chartered private banks. Ferocious competition is observed in soliciting customers in the consumer credit market and attracting federal government deposits.

In spite of the recent surge in private banks, the dominance of the banking sector by state-owned banks is still intact and has even strengthened recently. For example, total assets held by state-owned banks occupied 92.7% of assets held by all banks, which was a big jump from 87.5% in 2002. Moreover, in 2003, assets of the top two state-owned banks took up 43% of total bank assets but the proportion of the top two private banks was a mere 2.1%. One can find the main reason for increased dominance of state-owned banks from the troubling performance of several private banks and the subsequent banking crisis in 2003. Especially, the bankruptcy of Khalifa bank delivered a fatal blow to the nascent private baking industry. Established in 1999 by a young and ambitious businessman with financial wizardry, Khalifa bank became an immediate success story in the Algerian financial industry. However, it did not take long for the financial market and depositors to find that the bank was already insolvent due to mismanagement of funds and serious frauds committed by the bank's owner. The collapse of Khalifa bank followed by the collapse of several other private banks is thought to be one of the main reasons for the sudden disappearance of public trust in the entire banking system as well as private banks.

After the banking crisis in 2003, citing the importance of safeguarding the security of public funds, the Algerian government prohibited state-owned enterprises from depositing in private banks and made permission from the government a pre-condition for lending from private banks to state-owned enterprises. The measure severely weakened the business basis of private banks. Several foreign commentators argue that the measure was taken to check the expansion of foreign private banks and to stop the further encroachment of business basis of sate-owned banks by foreign owned private banks.

### *3.1.2.4. Deposits and loans*

The total stock of deposits at the end of 2005 was 2.9446 trillion dinars, an 8.8% increase from the previous year. Total deposits consist of 1.2204 trillion dinars in demand deposits and 1.7242 dinars in time deposits and most time deposits are short term deposits with maturities of no longer than five years. 95% of the total deposits were held by state-owned banks but private banks are growing very fast in the consumer credit market.

The total outstanding loan balance at the end of 2005 was 1.7783 trillion dinars, a 15.8% increase from the previous year. 50.4% of total loans were made to the public sector and 49.6% to the private sector. Due to privatization of state-owned enterprises and the recent boom in the private sector, the proportion of public sector loans in total bank loans has been declining steadily since 2001 when it peaked at 66.8%. Like deposit market, the dominance of state-owned banks is prevalent in the lending market and state-owned banks made more than 95% of total loans in 2005. Loans to the public sector are shared among state-owned banks but private banks are very active in making loans to the private sector with 15% of market share.

The maturity composition of loan stock is concentrated on shorter term loans. 52% of all loans are short term loans with maturities no longer than a year, 45% are medium term loans with maturities no longer than five years and 3% are long term loans. The dominance of shorter term loans has been maintained despite recent turbulent episodes in the financial market mainly due to restrictions imposed by the central bank. Concerned about the liquidity of banks' assets, Bank of Algeria imposed a ceiling on the proportion of long term loans financed by short term deposits.

Loan-to-deposit ratio was only 60% in 2005. One can infer that banks have not been successful in efficient financial intermediation and suffered from low profitability.

Algerian banks, state-owned or private, take a very conservative approach to the consumer credit market. Aside from the small portion of loans guaranteed by the government, offering enough collateral is the absolute pre-condition for loans to private businesses as well as individuals. For the present, loans based on credit evaluation without collateral are non-existent in Algeria. Lack of credit information on debtors, opaque accounting practices, excessive restriction on banks' activities by regulatory authorities, accumulation of bad non-performing loans and bureaucracy in state-owned banks are the commonly cited reasons for the conservative attitude of banks in the loan market.

#### *3.1.2.5. Non-performing loans (NPLs)*

Capital adequacy of banks seriously deteriorated due to NPLs made to state-owned enterprises and accumulated under the socialist regime. The Algerian government took a dramatic measure to enhance the capital adequacy of the banking sector and restore trust in the industry. A significant portion of NPLs held by state-owned banks were swapped with bonds issued and guaranteed by the Ministry of Finance. The efforts were very effective in lowering the ratio of NPLs from 50% in 2000 to 17% in 2005.

#### *3.1.2.6. Privatization of state-owned banks*

The Algerian government announced on several occasions that privatization of state-owned banks is one of the primary policy objectives in the financial market. However, no noticeable outcome has been obtained except for the privatization of CPA. CPA was established to deal with consumer finances and is still a strong player in the market. CPA was put up for privatization in the early 2000s and it is known that negotiation between the government and the prospective buyer is in the final stages. The privatization of BNA and BDL is also under way.

Contrary to repeated demonstration of a strong intention to privatize state-owned banks, progress has been very slow and some critics raise a suspicion about the prospect of privatization of state-owned banks. Some critics argue that the main reason for slow progress is the unwillingness of the Algerian government to transfer to foreign investors' ownership of banks that have been an important channel for distributing revenue from carbohydrate resources. From the demand side, the most obvious obstacle to fast acquisition of state-owned banks by foreign investors is opaque accounting standards still prevailing in the Algerian banking sector. Without a clear picture of the current status of the target bank, it is very difficult for foreign investors to dash into a bidding war.

### 3.1.3. Finance companies

Finance companies in Algeria do not accept deposits and specialize in lending in the consumer credit market. Nine finance companies were in operation in 2005. Barred from taking deposits and offering payment and settlement services, finance companies pursued niche areas in the consumer credit market rather than initiating direct competition against banks.

Still very small compared to banks, the industry is growing at a fast pace and most of them are pursuing a specialized segment in the consumer credit market such as auto leases, acquisition of mortgage loan debts and factoring service for household appliances.

### 3.1.4. Assessment of the current status of the consumer credit market in Algeria

The consumer credit market in Algeria shows strong signs of growth centering on mortgage loans and loans collateralized with jewelry and high priced durable consumer products such as cars and home appliances.

The biggest consumer credit market in Algeria is the mortgage loan market and the recent surge in mortgage loans can be attributed to strong activity in the housing market and housing construction boosted by the economic boom. CNEP is the traditional powerhouse in the mortgage loan market but other state-owned and private banks are also pursing larger market share very aggressively. Though small in size, loans collateralized by commercial properties and jewelry also constitute a part of the consumer credit market and banks are quite active in making loans to purchase high priced consumer goods such as cars and home appliances.

However, consumer credit products that do not require collateral in some form do not exist in the Algerian consumer credit market. Credit cards are the most widely used financial products through which consumer credit is granted based on credit evaluation rather than collateral but their usage is still in the nascent stage in Algeria. Lack of indispensable infrastructure such as a credit evaluation system is said to be the main culprit for insufficient development of the consumer credit market in Algeria but various efforts are being made to establish a strong infrastructure for the consumer credit market.

Considering the current status of the overall economy and the recent trend in the consumer credit market, we think that the potential demand for a wider range of consumer credit products such as credit cards exists on a considerable scale. The recent surge of automobile and durable consumer goods purchases represents the strong purchasing power of Algerian consumers and one can find a strong basis for demand for credit cards. Moreover, free from direct control by the government, intervention banks are searching for a new business model to bring high profitability. It is natural that banks turn attention to a new and lucrative financial product, credit cards.

It is time that Algerian policy makers assess the feasibility and desirability of the credit card market and facilitate institutional framework to help credit card market become embedded into the financial market in Algeria without significant side-effects.

## 3.2. Strategic Plan

### 3.2.1. Gradual approach

We advocate a step-by-step approach as the first principle of the strategic scheme for a successful mission. Considering the current situation of the consumer credit market in Algeria, it is unreasonable to attempt to introduce the credit card market immediately. Credit culture does not seem mature enough that creditors expect their property rights not to be infringed upon without due legal process. Infrastructure essential to successful functioning of the credit card market is not ready yet. A credit risk management system is still in its infancy and many years away from being applicable in practice.

In order to avoid unnecessary trial and error, the Algerian authority is advised to pursue successful establishment of a debit card market instead of attempting to introduce the credit card market which demands much stronger infrastructure. Since transactions through debit cards, especially if on-line based, are not involved in credit extension, promotion of debit card use can bring various benefits of payment cards to the economy without fear of mounting consumer debt. While focusing on the promotion of the debit card market, the government should take actions to prepare for establishing the credit card market. For example, legal and institutional arrangements to support frameworks for handling credit information should be advanced and regulatory structure for consumer protection should also be devised in detail. Extensive use of debit cards produces several important by-products such as accumulation of credit information and human resources, which could be utilized as very important assets when introduction of the credit card market is attempted.

### 3.2.2. Sectoral approach

Another important feature of the strategic plan recommended by the project team could be summarized as the sectoral approach. We believe that there are four layers of tasks that call for fundamentally different approaches in terms of expertise and resources; the strategy to establish a hardware system for the credit card network, the strategy to establish/strengthen the credit information system, the strategy to design legal and institutional arrangements to regulate the credit card industry and the strategy to encourage debit/credit card use in everyday transactions. Although, as already pointed out earlier, each layer requires different expertise and resources to successfully execute the recommended strategic plan, needless to say, all layers of strategic plans should be fully integrated and harmonized to achieve the common ultimate objective.

### 3.2.3. Korean Experience

Finally, the lessons we learned from experiences in the Korean credit card industry should be fully utilized in designing the strategic plan to establish a strong and viable credit card market in Algeria. Since we often observe increased instability in financial markets when a new financial product is introduced in developing countries, particular attention should be paid to make sure that market participants as well as the regulatory authority are given enough time to adjust to the new product and the transition path of the market will not fall on an explosive path that would lead to formation of an unviable bubble in the financial market.

# Chapter 3

# Proposals to Establish a Credit Card Payment Network in Algeria

# Summary

*Joonmo Na*
*Director, BC Card*

A Credit Card is defined as a method by which people can purchase goods and services without cash. Cardholders are to present some form of a special symbol, a plastic card, which represents their credit. The definition of credit cards can be expanded to include prepaid cards and debit cards.

The participants in the Credit Card Industry are cardholders, merchants, and credit card companies and these three components are required to make credit card use smooth. It can be assumed that if any one of these components is missing, credit cards will not function properly.

Basically, the credit card network is operated by three bodies but when we consider the different roles between issuers and acquirers, it is operated by four parties. Therefore, we classify the structure of the credit card industry into a 4-party structure or a 3-party structure according to the division of the role between issuer and acquirer. The major feature that distinguishes the 4-party structure from the 3-pary structure is whether issuing and acquiring are done separately or not.

It is a generally accepted proposition that the 4-party structure is more efficient than the 3-party structure because the former uses a common merchant network to eliminate duplication of costs and issuers and acquirers specialize in their business areas.

The credit card industry in Algeria adopted a 4-party structure, which is generally regarded as an advanced model because Algeria benchmarked the European model. SATIM, established by 8 national banks, stands in the middle of Algeria's credit card industry as the sole agent to play the roles of merchant networking and settlement.

There seems to be many obstacles to further developing the credit card industry in Algeria. To name a few; low level of bank IT systems, insufficient merchant infrastructure, and low level of understanding of credit card usage by cardholders, all of which are causing credit card industry inactivity in Algeria.

We suggest that 5 areas should be addressed to establish a viable and active credit card industry in Algeria;

- Introducing an advanced and efficient credit card industry structure
- Clarifying roles of market participants based on division of labor and specialization
- Providing a reliable and advanced system for stable business
- Expanding merchant infrastructure and improving cardholder's understanding of credit cards
- Introducing new credit card products in a gradual manner following maturity of the credit card market

Concerning the structure of the credit card industry, it is very important to note the implementation of an advanced and efficient industrial structure in the Algerian credit card market based on division of labor and specialization. That would bring a low-cost high-efficiency credit card industry to the Algerian consumer credit market. Since Algeria has already set foot into the credit card industry based on a 4-party system which is regarded as having an advantage in terms of cost over the 3-party system, we recommend that Algerian policy makers search for room for further improvement in industrial structure.

We recommend the clarification of roles of market participants with division and specialization to avoid any possible costs which could be generated by duplication of roles and functions by different market participants.

An advanced and reliable network system should be introduced to efficiently enable overall operation of credit cards. Great effort should be made to deploy more terminals and register more merchants who accept credit cards until there are enough of them to achieve broad and general acceptance of credit cards in Algeria.

In addition, to promote use of credit cards, there should be well-designed and appealing marketing by credit card issuers. In particular, incentives to use credit cards such as discount plans or mileage service could be offered to cardholders to bring better understanding of credit cards. Efforts to support the proliferation of credit card use into the Algerian economy should be harmonized to bring better results and will require active participation of all players in the credit card market.

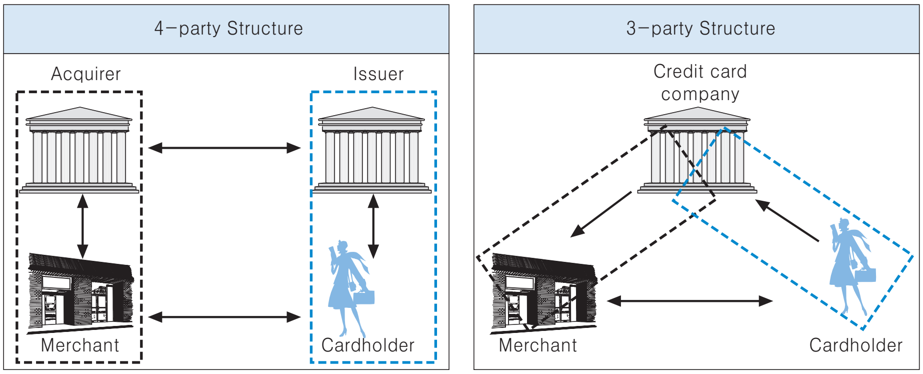
It is also recommended that Algeria take a gradual approach in introducing new credit card products. Considering the current state of the consumer credit market in Algeria, most efforts should be directed to establish a strong debit card market that does not force Algerian banks to deal with excessive amount of credit risk. The network infrastructure and experience of financial institutions obtained from operating the debit card industry will be invaluable assets to introduce different kinds of credit cards such as charge cards or revolving cards that require financial institutions exposure to higher levels of credit risk.

# 1. Benchmarking Advanced Countries

## 1.1. Understanding of 4-party Structure and 3-party Structure

The credit card network is basically operated by three bodies but when we consider different roles between issuer and acquirer, it is operated by four parties. Therefore, we classify the structure of the credit card industry into a 4-party structure and a 3-party structure according to the division of the role between issuer and acquirer. The major feature that distinguishes the 4-party structure from the 3-party one is whether issuing and acquiring are done separately or not.

Figure 3-1 ●● Comparisons of 4-party Structure and 3-party Structure




A 4-party structure is formed when issuing and acquiring are separately operated, which can also be perceived as owning specialization in issuing and acquiring. This structure emphasizes competitiveness and ineffectiveness through specialization. But the 4-party structure requires separate institutions (associations like Visa and MasterCard) to connect issuer and acquirer together. On the contrary, a 3-party structure is when the credit card company performs the issuing and acquiring at the same time. Such a structure is greatly favored by major credit card companies because it is possible for them to empower their own brand by issuing and acquiring at the same time.

To summarize, a 4-party structure is when issuer, acquirer, credit card company and cardholder exist while a 3-party structure consists of cardholder, credit card company and issuer/acquirer.

## 1.2. Benchmarking 4-party Structure: US and Europe

A 4-party structure is applied in most countries except Korea and Japan. It's often called Association Model as a separate institution is required to connect issuer and acquirer.

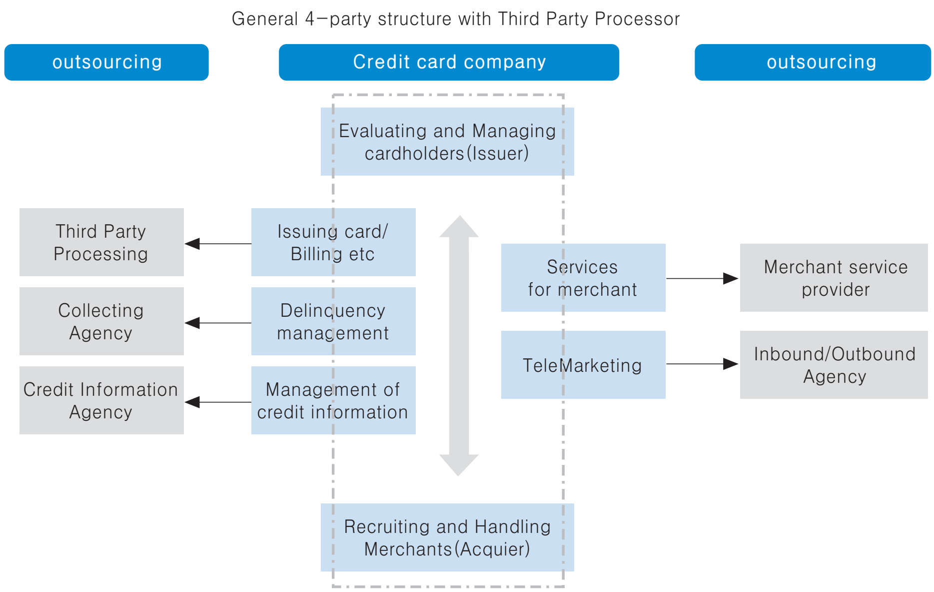
The U.S. and European markets are the best examples of the 4-party structure. The U.S. is the top player in credit card transactions and card issuing volume and the European market takes second place in the world. In the case of the U.S., the credit card industry had a 3-party structure since the present-concept credit card was introduced in 1950. However, problems such as difficulty with the network due to broad land size and low cost effectiveness caused by duplication of several issuers on the merchant network changed the industry to a 4-party structure which enables a sharing merchant network.

Figure 3-2 ●● Merits and Demerits of 4-party Structure and 3-party Structure

| 4-party Structure | 3-party Structure |
|---|---|
| • USeparation of issuing/acquiring which leads to specialization<br>• Eliminating overlap of card business infra by specialization of the acquirer(increase effectiveness through 1 to 1 contract between merchant and acquirer)<br>• Increase of cost effectiveness through specialized roles<br>• Possibility of decrease in process flexibility regarding standardization<br>• Visa, MasterCard, BCCard (Korea), JCB (Japan) represent 4-party structure | • Enable brand differentiation by brand specialization<br>• Simplification of process and total processing through insourcing<br>• Individual development of network which would result in increased cost due to duplicate acceptance of networks (contract between 1 merchant to multiple acquirers needed)<br>• Decrease of cost effectiveness due to managing both cardholder and merchant<br>• American Express, Diner's Club Card represent 3-party structure |

For the 4-party structure to operate successfully, some institutions are required to connect several issuers and acquirers. As a result, Visa and MasterCard were established as associations. With Visa and MasterCard establishing a merchant network, a connecting network between issuer and acquirer for payment, and doing settlement between issuer and acquirer, the credit card market specialized as it was clearly divided into an issuing market and an acquiring market. With specialization and separation of issuing and acquiring, processing companies which substituted for the issuer and acquirer entered the market, speeding up the specialization of issuing and acquiring. These processing companies became another important service provider for the credit card business to do business cost-effectively and we call these processing companies third party processors generally. In the European case, with the second biggest market in the world, UK represents an advanced credit card market and adopted a typical 4-

Figure 3-3 ●● Structure of Credit Card Industry in US




party structure. Whereas the U.S. has developed a 3rd party processor, UK and other European countries do their processing by themselves and major banks play roles of issuer and acquirer at once even though they operate under a 4-party structure.

## 1.3. Benchmarking 3-party Structure: Korea and Japan

Whereas most advanced credit card countries have a 4-party structure, 3-party structure is generally common in Korea and Japan in that there are credit card companies in charge of both issuing and acquiring, merchants and cardholders.

In Korean and Japanese cases, though the credit card industry is well-developed, since the 3-party structure was adopted at the inception of the credit card industry, they have mainly used the 3-party structure until now.

As the 3-party structure settled, each credit card company possessed its own merchant networks, thereby forming inefficient industry structure. In other words, one merchant might have several different networks connected to its system.

The reason several networks can be built easily in Korea and Japan is because a VAN (Value Added Network) provider connects merchants and credit card companies, setting Korea and Japan apart from other countries. At the early stage of the credit card industry, credit card companies that had difficulties in network connection for each merchant made a contract with a VAN provider which connected merchants and credit card companies. The VAN provider played important roles in providing credit card terminals to individual business owners and intermediating authorization with credit card companies. With such a contract, VAN providers offer intermediary connection between merchants and credit card companies.

By agreeing to a network usage contract with VAN providers, credit card companies were able to have their own credit card network at a low cost. Merchants were able to honor various credit cards which were issued by several credit card companies by agreeing on a contract with a VAN provider.

VAN providers made it possible for merchants to be connected to different networks with ease. However, inefficiency still exists with merchants having merchant contracts with each credit card company. Furthermore, since each credit card company has contracts with each merchant and overlap with other credit card companies is likely, issues regarding cost inefficiency are regarded as major problems facing the market.

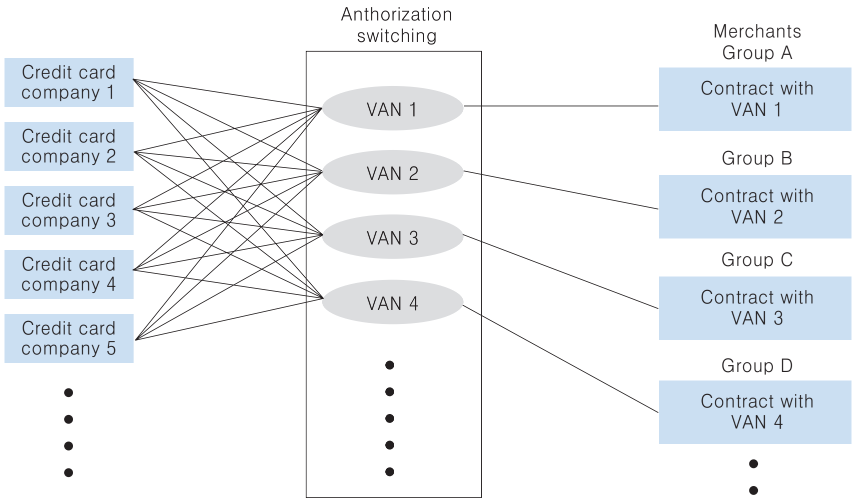
Credit card companies in Korea and Japan, which constructed an individual merchant network via VAN providers, have recently realized the cost inefficiency of duplicate and overlapping management of merchants and so they are in search of improvement.

In the Japanese case, DC Card (the fourth biggest credit card company in Japan), FDC (the biggest Third-party processor in the U.S.), NTT (the biggest telecommunication company in Japan), Diamond Computer (system company in Japan) co-founded an acquirer named “Nihon Card Processing” in 2001.

Korea also tried to build a public usage merchant network to improve efficiency of credit card business in 1999, but failed because of the lack of support from credit card companies.

The discussion on improving the efficiency of network duplication is still ongoing and there is a meaningful movement in the Korean credit card industry. Currently, BCCARD was turned into an acquirer in 2006 and it sped up system re-organization that might play a role in resolving problems we are facing in Korea.

Figure 3-4 ●● Networking of Credit Cards in Korea and Japan



# 2. Case Study of the Credit Card Payment System in Korea

## 2.1. Development of the Credit Card Industry in Korea

### 2.1.1. Introduction (1969-1986)

In 1969, the first credit card was introduced by Shinsegae Department store. The Shinsegae department store card was issued by the department store only for employees and could be used in Shinsegae department store only. After that, some department stores and hotels began to issue credit cards for their customers, but these could be used only for their department stores and hotels.

Later, two banks, Korea Exchange Bank and Kookmin Bank, made the first move into the general credit card business. In 1979, KEB affiliated with VISA and started to issue credit cards only for use abroad and Kookmin bank started to issue a general-purpose credit card for domestic use in 1980.

Another movement in the progress of credit card business in Korea was made in 1982. Five commercial banks established BCCARD Company jointly to start their credit card business in an effective way, and the company contributed to the growth of credit card business.

### 2.1.2. Growth (1987-1998)

The present credit card system emerged after the credit card law was first enacted in 1987. After the introduction of the law, the use of credit cards increased significantly with the emergence of many credit card companies, both bank and non-bank ; credit card divisions of some banks were separated from their parent banks and set up independent credit card companies. In this period, the use of credit cards in consumers' lives became a general method of payment.

### 2.1.3. Maturity (1999-2002)

To build a standard of assessment and accelerate consumption, the Korean government decided to activate the use of credit cards and encouraged their use by various means that included income tax reduction, tax-deduction for merchants, sales slip lottery, etc.

These efforts led to sudden expansion of the credit card market and maturity of the industry. There was fierce competition in the credit card industry to attract members.

As a result of the encouragement of the Korean government and aggressive business activity of credit card companies, the market expanded rapidly. 39 million credit cards were issued accumulatively and 90 billion in sales occurred in 1999. In 2002, the total number of credit cards and the annual sales amount of card usage recorded 104 million cards and 678 billion USD respectively. Compared to the 1999 market, this is 2.7 times more credit cards issued and 7 times more sales.

### 2.1.4. Restructuring (2003-2004)

One cannot deny that the fierce competition among credit card companies and policy to encourage the use of credit cards brought about rapid growth of the industry. However, they also caused very serious side-effects.

As a result of fierce competition among credit card companies, the credit card market had a record 8.3 billion USD deficit caused by the rise of the delinquency rate and huge credit defaults. These side-effects led the credit card industry to restructure and many mergers and acquisitions of credit card companies occurred in this period.

### 2.1.5. Recovery (2005- now)

Through restructuring, the credit card industry has been stabilized and moved into the black since 2005 due to the strengthening of risk-management activities like reduction of insolvent assets and delinquency rate. Recently, these efforts have led to expansion of sales and profit in the credit card industry again.

## 2.2. Characteristics of Korean Credit Card Payment System

### 2.2.1. The important characteristics of the Korean market

Unlike the U.S. and Europe, the Korean credit card industry's unique structure has operated with a 3-party structure from the early stage to the present.

Credit card companies in Korea have roles as both issuer and acquirer together, which means a 3-party structure. A very closed and exclusive structure to other credit card companies is the main characteristic of a 3-party structure and the Korean credit card industry has the same features. Because the Korean credit card industry has a 3-party structure, there are many merchant networks that are duplicated.

The maintenance of this 3-party structure is possible because of Korea's small land size relative to the U.S. and activity of VAN that allows the participants to operate nationally pretty easily. In addition, the consideration of credit card companies on the merchant network is one of the main reasons to have duplicate networks respectively. The credit card companies in Korea consider their own merchant networks an important factor in competition in the credit card market.

The Korean credit card industry players cannot help acting individually as both issuers and acquirers are caused by the 3-party structure. Eventually, credit card companies cannot establish business without their own merchant networks. These inefficiencies increase social cost from credit card business such as the cost increase for managing merchants and high transaction cost by joining up with credit card companies individually.

### 2.2.2. The recent changes to the credit card payment system

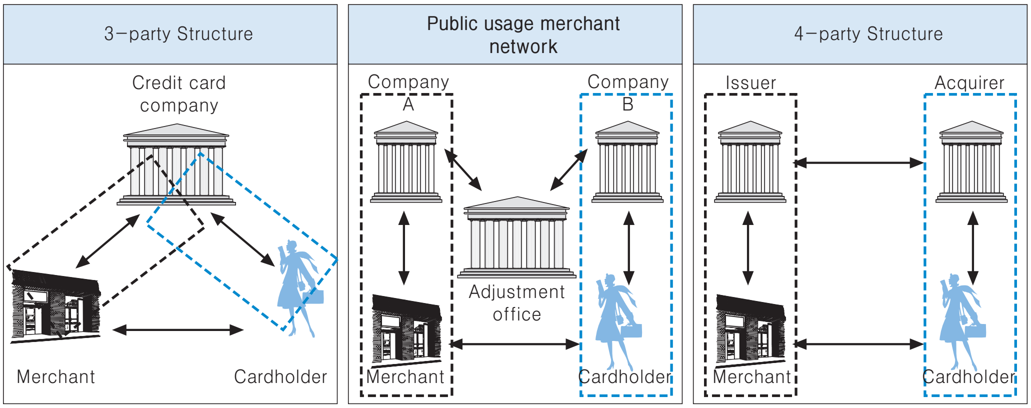
The Korean government tried to build a public usage merchant network to alleviate the inefficiency of the credit card business in 1999, but it failed and it remains a burden.

A public usage merchant network means that a merchant joining a credit card company can admit all credit cards that are issued by different companies from the company with which the merchant has a contract.

But, irrespective of its effort to prevent reduplicative social cost caused by the 3-party structure, the public usage merchant network failed because of non-cooperation by credit card companies and many exceptions in public usage. Until now, credit card companies still recruit new merchants individually.

The reason for the failure of the public usage merchant network is mutual agreement among credit card companies to minimize this regulation so as not to reduce merchant fees and loosen vested rights.

Figure 3-5 ●● Public Usage Merchant Network




After the failure of the public usage merchant network, the Korean credit card industry is continuing its efforts to improve the efficiency of business structure by making a 4-party structure, a more developed business structure.

In 2003, BCCARD Company changed its structure from a closed system which could only be used by its own members to an open system which can be used by others besides its own members. In 2006, BCCARD Company transferred to a special acquirer. BCCARD Company and its member banks expect improvement in profit through decentralizing acquiring tasks that will make it more efficient and reduce costs.

Meanwhile, in 2005 the world's No.1 card processing company, FDC, entered the Korean market. Maybe it will develop a specialized processing system in the medium to long term.

## 2.3. Introduction of Advanced Technologies and Adoption in Korea

### 2.3.1. Introduction and application of advanced IT technologies

For the last 40 years, MS (Magnetic Stripe) cards were the most common method of recording financial transaction information, especially on credit cards, but the need for new safer devices to store financial transaction information has occurred because of MS's weakness in security capacity to prevent fraud.

Credit card companies considered many security systems to make up for MS recording technology’s weak points, but those tries reached their limits in securing the data on MS by continuous emergence of new fraud technologies to break such security measures.

To secure financial transaction data on credit cards and to ensure against credit card transaction fraud, credit card companies applied IC chips on credit cards worldwide since 1990, with 100 countries issuing 140 million cards in the past 5 years.

IC card is a new device which has a special function that is able to store credit card information and handle credit card transactions by itself. It has many good points in comparison with MS card; it has larger capacity for data storage space than MS card by 40 to 300 times, so it contains diverse service functions besides credit card information at the same time. Its security ability is much stronger than MS card so there is no fraud technology to counterfeit IC card yet.

As credit card companies change the method of storing credit card data from MS card to IC card, they can reduce the cost of transaction authorization through making a credit card transaction just by checking the PIN on the IC card, preventing the accidental leakage of credit information through encoding IC card transaction information.

Moreover, they can improve the convenience for use through reducing the cost of issuing and utilizing for marketing immediately; it is not necessary to issue additional cards because IC card contains additional data and converts the information on it.

IC card has really expanded because Europay, MasterCard, and Visa, the global leaders in payment standards, developed the international EMV standard to prevent fraud using MS card.

Visa and MasterCard have been carrying out a global plan to transfer all MS cards to IC cards with EMV standard by 2010, forcing their member credit card companies to follow. Their plan has been well carried out by members and is expected to be completed within the planned time.

In the case of Korea, as many financial accidents from electronic transactions by credit cards continuously occur, the FSS (Financial Supervisory Service) decided to force all credit card companies and banks to transfer all MS credit cards and cash cards to IC cards by 2008 to prevent frequent electronic payment accidents, and the policy has been progressing steadily under control of the FSS.

According to the FSS policy, Korean credit card companies and banks accelerated issue of IC cards and every card will be replaced by 2008 as planned.

### 2.3.2. Evolution of credit cards through next generation technologies

Regular IC cards are processed by the contact of the IC chip with the credit card terminal which can read the information on the IC chip, but its weak side is that it takes some seconds for processing.

To overcome this weakness, Korean credit card companies are adopting and developing new technologies such as RF (Radio Frequency) and IrFM (Infrared Financial Messaging) that can be processed without any contact.

The contact free technology is expected to grow continuously with the use of IC chips, and those technologies will be applied in many ways for credit card transactions within 5-10 years.

RF (Radio frequency) Card: RF technology can shorten authorization time and cost significantly by contact free payment service using constant frequency radio waves. This technology is applied to transportation using credit cards with RF and is a main payment method for paying fares now in Korea. Because of its convenience, it is expected that its usage will be diversified in many ways.

IrFM (Infrared Financial Messaging): This is also another wireless communication payment service chosen by IrDA (Infrared Data Association) which is using infrared without contact. The difference between IrFM and RF is that IrFM is controlled by the user's intention when he wants make a transaction. This is possible because it has a bilateral direction like a TV remote control.

In Korea, credit card companies and mobile telecom companies are operating IrFM payment systems by placing a chip which has credit card data into a cell phone or PCS phone through a technical tie-up.

# 3. Understanding of the Algerian Credit Card Market

## 3.1 Evaluation of the Credit Card Environment in Algeria

The credit card industry in Algeria started to penetrate throughout the country as eight national banks established SATIM for credit card business and to enable check payment between the banks in 1995. Almost ten years have passed since the establishment of SATIM. A 4-party industry structure was introduced in Algeria and is being settled as the main business structure as SATIM performs the role of credit card settlement and network provider between financial institutions, and issuers and acquirers perform their own roles. Considering Algeria's preparedness, it has prepared enough for successful development of the credit card industry in terms of technical aspects.

However, there are still severe obstacles to improving the credit card payment system. Individual financial institutions that play roles of issuer and acquirer do not have their own real-time authorization system and this fact results in operations risk such as impossibility of checking real-time account balances, which is assumed to be the most critical factor in debit transactions.

Considering merchants, merchant infra needs much more improvement to satisfy the requirements of a mature credit card business environment. At present, only 430 terminals (TPE), which are required for credit card transactions, are deployed in Algeria and, unfortunately, such a reality leads to lack a of infrastructure to enable cardholders to participate in transactions freely.

In addition to previously mentioned problems in Algeria, the number of debit/credit cards issued in Algeria which have a payment function is only 0.1 million. This means that much more effort is needed to expand the number of cardholders participating in credit card transactions throughout the country.

Due to insufficient merchant infrastructure and low card penetration nationwide, an average of only 2000 transactions occur daily and that implies that usage of credit cards is very low in Algeria and needs to be revitalized.

Unfortunately, the biggest obstacle in Algeria could be cultural factors that are pretty similar to those Korea experienced at the beginning of its nationwide adoption of credit cards. Some factors are merchants not accepting credit cards for tax avoidance purposes and cardholders having low understanding of credit card usage and also tendency to use cash instead of credit cards for purchases. These cultural factors are hindering credit card penetration and revitalization in Algeria.

In the case of Korea, it also experienced the same obstacles Algeria is facing these days. It was very common for merchants to encourage customers to pay by cash rather than credit cards so that their taxable revenue would not be exposed. Cardholders in Korea, like Algeria, preferred cash rather than presenting credit cards for payment. They were more comfortable with paying by cash since they were used to it and they were not very familiar with credit cards. Similar to the situation in Algeria, these factors were recognizable problems in expanding credit card usage and acceptance around Korea. Nationwide effort and education to overcome the obstacles in promoting credit card usage around the country occurred. Fortunately, Algeria seems to be taking similar steps to Korea, which could indicate that Algeria could also revitalize credit card usage in a similar fashion to Korea.

Figure 3-6 ●● Evaluation of the Environment of the Credit Card Industry of Algeria

Low ⟷ High

| | Current Status | Evaluation |
|---|---|---|
| Network Infrastructure | Integrated merchant network and settlement system between SATIM and financial institutions are certified by international card companies which provides Algeria with basic infrastructure | |
| System of Financial Institutions | Risk exists due to non–existence of real–time authorization system at card issuing financial institution(bank) | |
| Merchant Network | Needs active expansion of merchants since there are only 430 merchants which accepts credit cards | |
| Card volume and usage | 0.1 mil cards have been issued which is pretty standard enough to launch the business but cardholders are lack of understanding about credit cards and high preference of cash somewhat hinders the usage of credit cards in Algeria | |

## 3.2 Five Core Factors for Development of Credit Card Market in Algeria

Considering conditions in the Algerian credit card market, we suggest the following factors to be taken into account for establishment of a successful credit card network.

- Introducing developed credit card industry structure
- Clarifying roles of market participants through division and specialization
- Providing complete system for stable business
- Expanding merchant infrastructure and improving cardholders' understanding of credit cards
- Applying credit card products by stages in regard to market maturity

In regard to industry structure, it is assumed that implementing developed industry structure in Algeria through division and specialization will expand the Algerian credit card industry into a low-cost high-efficiency structure. Since Algeria has set foot into the credit card industry, it is also recommended that it clarify roles of market participants with division and specialization to avoid any possible opportunity cost which could be raised by duplication of roles.

Moreover, regarding industry infrastructure, a complete system should be prepared to efficiently enable overall operation of credit cards. Deployment of terminals and registering more merchants to accept credit cards should continue until there are enough in Algeria for successful credit card acceptance infrastructure.

In addition, to promote use of credit cards by cardholders, there should be some marketing and benefits offered to cardholders which in turn would bring better understanding of credit cards. All these efforts should be made nationwide with everybody participating in every way to make a proper environment for the credit card industry to flourish in Algeria.

It is also recommended that Algeria begin with debit cards and then expand to credit cards as the credit card industry matures and stabilizes. As commonly known, debit cards are rather safe and hold lower risk so it is suggested that Algeria adopt debit cards at the beginning of the industry.

# 4. Proposals to Establish a Strong and Efficient Credit Card Network in Algeria

## 4.1 Establishment of Advanced Credit Card Network

### 4.1.1. Stabilization of developed 4-party structure

As mentioned previously, the structure of the credit card industry in Algeria adopted a 4-party structure, which is basically an advanced model because Algeria benchmarked the structure of Europe. Also, SATIM, which was established by 8 national banks, stands in the middle of Algeria's credit card industry by playing the roles of merchant networking and settlement solely.

The reason for adopting a developed industry structure through a 4-party structure is that scale of economy can successfully be accomplished, resulting in high-efficiency with low-cost within the whole industry. As of now, a 4-party structure has already been established in Algeria and with a little more attention and effort to developing stronger status, Algeria has a very bright and positive future for a developed industry structure.

Figure 3-7 ●● A Scheme to Build an Advanced Credit Card Industry

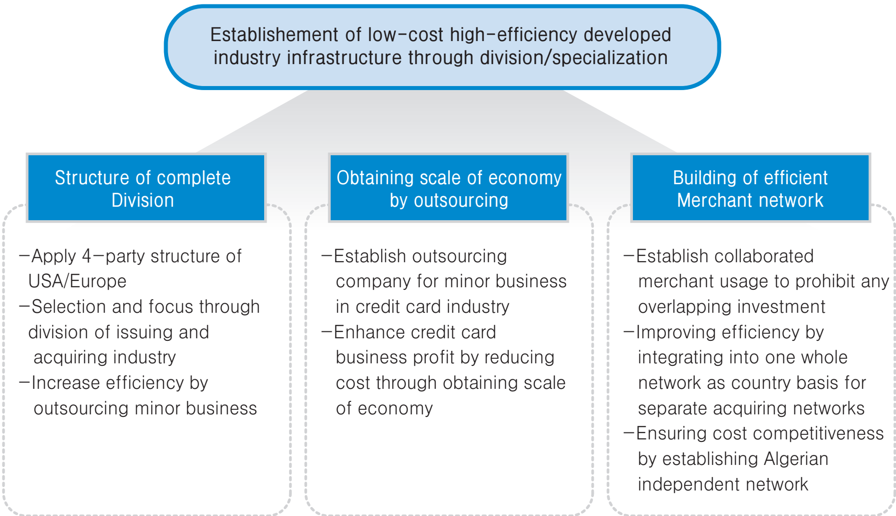
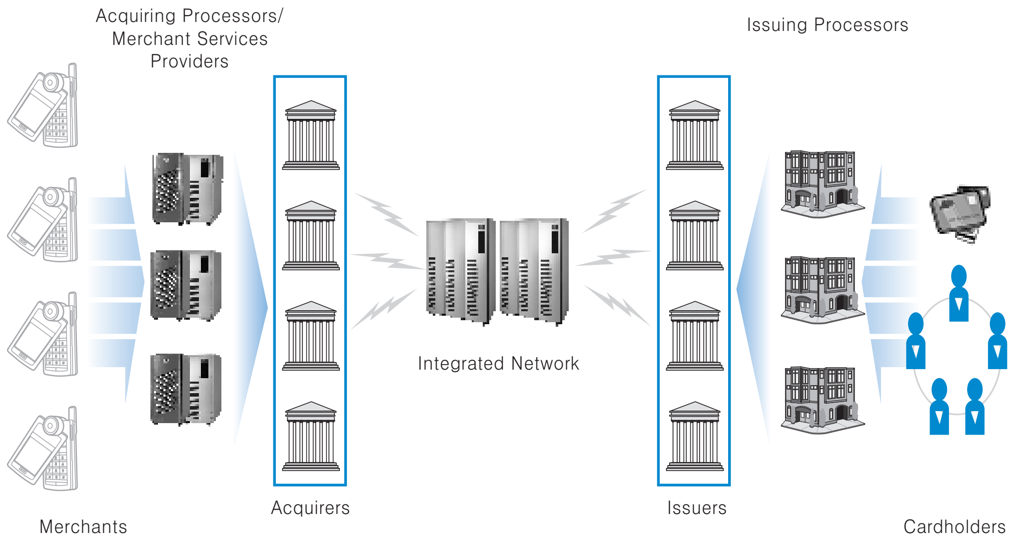


Figure 3-8 ●● Developed Structure of Credit Card Industry by Division and Specialization



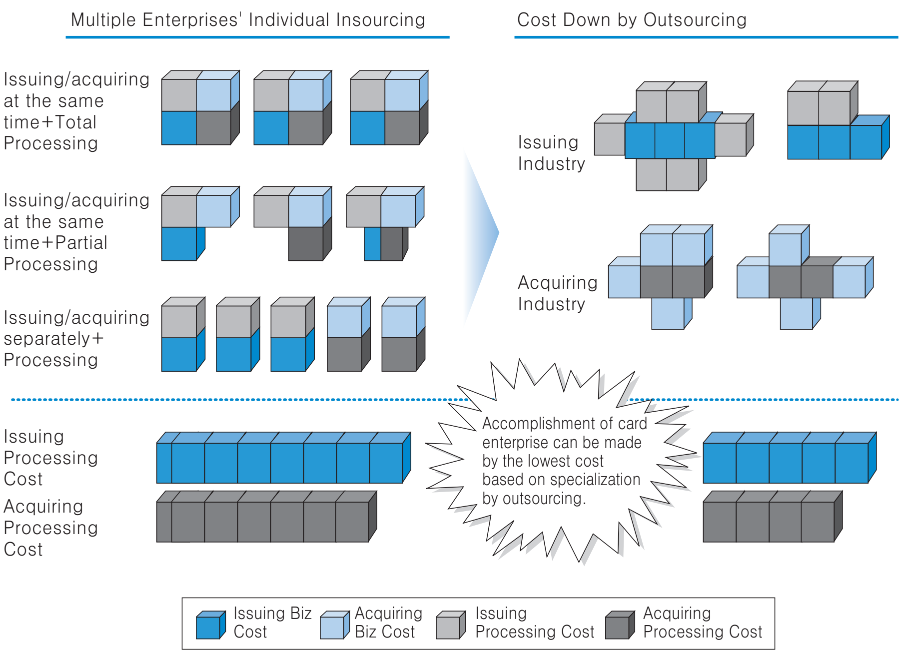

To achieve developed industry structure, it is required to have division between issuer and acquirer along with outsourcing of minor (non-core) roles of issuing and acquiring, which would ensure economy of scale in the whole market. One integrated single network is also required to prevent duplication of investment in the merchant network, enabling the Algerian credit card market to secure cost competitiveness.

The table below explains what specialized industry structure is. As explained earlier, it is the structure where issuer and acquirer register cardholders and merchants and in between this floor, there are designated processors and one integrated network which acts as a connection. This would complete the whole structure.

### 4.1.2. Achieving economy of scale by outsourcing

The most critical matter continuously emphasized in developed industry structure is achieving economy of scale through specialization. In the case of the credit card industry, those engaged in credit card business would be able to perform tasks at a low-cost by outsourcing non-core (minor) roles of issuer and acquirer. On the other hand, it can be interpreted as issuer and acquirer being able to focus more on core roles by outsourcing.

Figure 3-9 ●● Achieving Economy of Scale by Outsourcing in the Credit Card Industry




An economy of scale occurs when instead of one individual performing every task, outsourcing certain tasks to a third party specializing in that area would mean economic efficiency with lower cost needed to perform those tasks. Therefore, the same task would be done at a lower cost by outsourcing certain tasks to a third party.

Some tasks that could possibly be outsourced in the credit card business are card issuance, mailing of billing statements and collecting credit card sales slips. By outsourcing these areas, credit card companies can enjoy higher profits by having a third party perform the same tasks at a lower cost than completing those tasks by themselves. In addition, as a professional processor is responsible for outsourced tasks, higher-quality service is expected as well.

## 4.2 Roles and Operation Standards of Each Business Sector

### 4.2.1. Roles of each business sector

To establish specialized developed industry structure in Algeria, it is very important to clarify the roles of each business sector participating in the industry. These business sectors are issuer, issuing processor, acquirer, acquiring processor and integrated network in Algeria. These parties would perform their own independent and specialized roles.

#### *4.2.1.1. Integrated network*

An integrated network performs a core role in establishing developed industry structure. Its roles include connecting network and intermediating transaction authorization between cardholder-holding issuer and merchant-holding acquirer to enable credit card transactions. One other role performed by the integrated network is settling credit card transaction funds between issuer and acquirer.

#### *4.1.2.2. Issuer*

Its roles include registering/monitoring cardholders, controlling card limit of cardholders, setting certain standards for giving authorization to cardholders, managing cardholder risk, marketing and conducting loyalty programs, and controlling delinquency and loans. These roles are bound to be performed by the issuer in a developed structure.

#### *4.1.2.3. Issuing processor*

It is the business sector which performs secondary roles besides the core roles done by the issuer, which is said to be responsible for non-core tasks. These roles include card manufacturing and mailing of completed cards upon card issuing request, operating call centers, operating the network for card issuance and controlling bad loans.

#### *4.1.2.4. Acquirer*

The acquirer performs overall roles concerned with merchants such as registering/monitoring merchants, intermediating authorization data transmitted from merchants, acquiring sales slips and settling the funds to merchants, managing merchant risk and operating additional business associated with merchants.

#### *4.2.1.5. Acquiring processor*

An acquiring processor performs roles of providing actual merchant services on-site. Such tasks include deploying terminals at merchants, supporting roles of acquirer to the merchants instead of acquirer, collecting sales slips, operating computer systems for acquiring business and performing services requested by merchants.

### 4.2.2. Operation plan for business sectors

To firmly establish specialized developed industry structure in the market, not only is clarifying the roles of each business sector important, but also setting the standards for successful operations of each business sector is critical as well. These two significant points are mutually related to each other and both play a major role in achieving successful industry structure.

First of all, an integrated network which is most important in a 4-party developed industry structure should be operated as a neutral institution that would mediate interests of multiple business sectors. It should also be promoted as a professional institution in charge of intermediating domestic authorization.

The basic reasoning that lies beneath such a plan is that very high costs are incurred with solutions provided by VISA and MasterCard and there is a trend of continuously rising costs in the near future as well. By promoting an integrated network as a professional and specialized institution which intermediates domestic authorization, it would enable Algeria to manage costs caused by domestic transactions more efficiently rather than depending on solutions offered by VISA and MasterCard.

To have a neutral integrated network intermediating public domestic transaction authorizations, it is recommended to be operated as an independent institution by associated investment of banks or national treasury support. It is very worthwhile to expand and strengthen the functions of SATIM.

Second, issuers who are responsible for cardholder-related business should be operated as financial institutions licensed by the Algerian government to manage efficiently and prevent excessive competition. This would also be appropriate for risk control. Promoting financial institutions specializing in issuing and outsourcing non-core tasks would lead to cost-effectiveness. Therefore, it is suggested that issuers operate under these standards for efficiency.

Third, acquirers can be seen slightly differently than issuers. Whether a special company wholly engaged in acquiring is established or an issuer dually performs the role of acquirer at the same time, there are no problems or controversies at all. The only standard that should be set for acquirers is managing asset soundness and having the acquirer compete freely without any detailed limitations or terms. Through competition, we can expect application of appropriate merchant fees with demand/supply as well.

Last, a professional processor which is indeed in charge of secondary, non-core tasks of issuing and acquiring business should be promoted as specialized processors which focus on issuing/acquiring processing. They should be operated to help the issuing and acquiring industry to advance effectively and successfully.

Moreover, it is recommended that acquirers have these processors compete with each other freely so that there is cost competitiveness by demand/supply. However, SATIM could process solely until market volume expands sufficiently to satisfy market demand. From this point on, specialized processors would be put into competition.

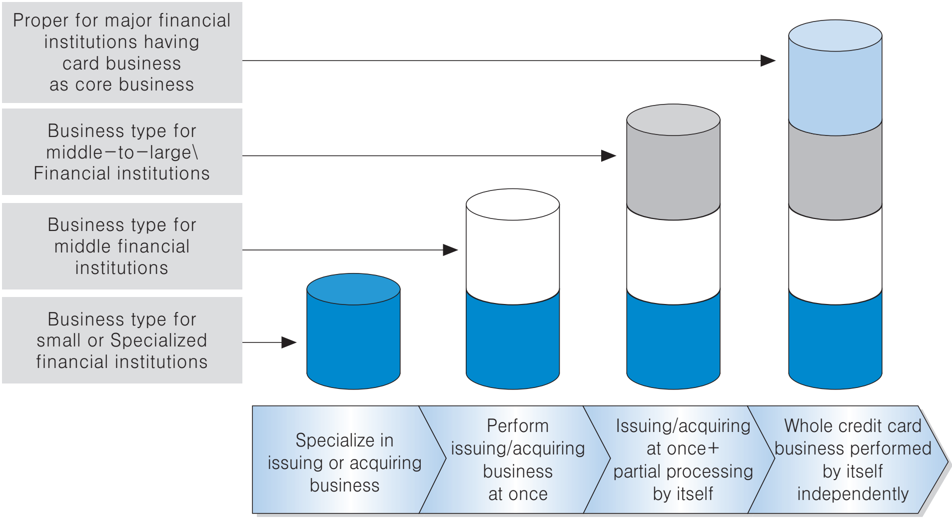
### 4.2.3. Setting the range for business sectors

Previously, we looked at the roles and the operating standards of business sectors. However, despite the fact that we have classified roles by each business sector, we did so irrespective of special conditions, using just the basic classification of roles. The actual roles performed could be expanded to the extent of capacity and volume of each business sector.

To aid the understanding of such an explanation, we can think of major financial companies which focus on card business. They engage both in issuing and acquiring rather than perform as issuing-oriented or acquiring-oriented. In alignment, they would also accomplish doing the processing business on their own if enough demand and sufficient workload were guaranteed.

On the contrary, small-sized or financial institutions specialized in issuing or acquiring business should go through selecting and finding business areas to concentrate on so that they are competitive.

Figure 3-10 ●● Several Business Models according to the Scale of Financial Institution




As specialized industry structure is firmly established in Algeria, there is no need to prohibit or make any restrictions on operating in a diverse range in regard to business volume or capability of each business sector. However, management of the process is required so that there are not too many participants in the market that might create confusion or cause problems in the industry.

## 4.3 Building a Network for Stable Credit Card Industry

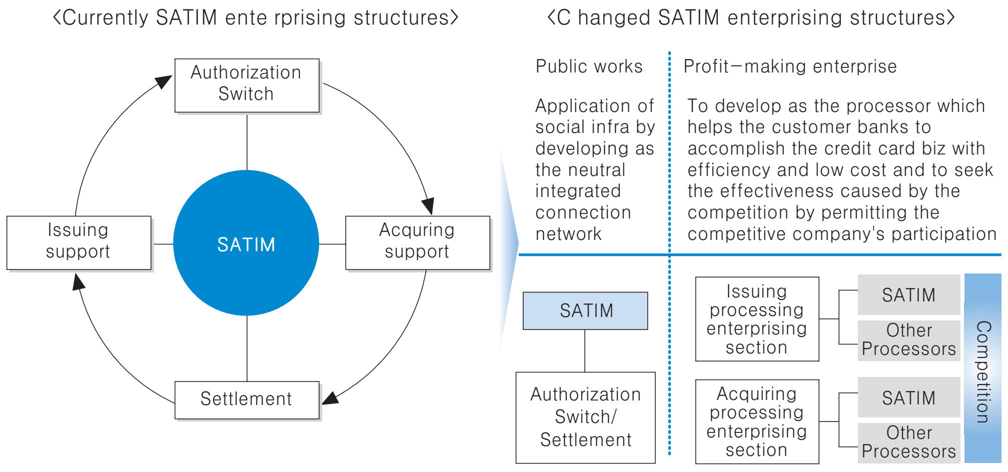
### 4.3.1. Building an Integrated Connection Network

Currently in Algeria, SATIM has the role of being a network between issuer and acquirer. SATIM's current technical ability and electronic processing capacity is highly valued to satisfy the international standard.

Considering the present level of SATIM, it is proper to develop SATIM as a neutral specialized institution that executes the role of relaying domestic transaction authorizations and settlement organizations in Algeria, which means SATIM is the only integrated network, by enhancing SATIM's function. Since many banks are already operating card businesses through SATIM now, it will be very efficient to make SATIM an integrated network between banks in view of time.

But, SATIM could consider specializing as the integrated network by dividing business sectors in the long term to concentrate more on an integrated connection network rather than card issuing and acquiring related business offered by banks. As explained before, SATIM has two business sectors which are the integrated networking sector and issuing and the acquiring processing sector, but to make SATIM a neutral organization, the processing sector which is pursuing profit could obstruct its identity as neutral.

Figure 3-11 ●● Building Integrated Connection Network: specialization of SATIM's role




In the case of the issuing and acquiring processing sector, it could possibly alter a business unit for profit in SATIM or separate from SATIM and operate as an independent corporation. From an economic viewpoint, if the processing sector is separated from SATIM and other processing service providers are allowed to do business, low cost and high efficiency service would be provided to many issuers and acquirers through competition.

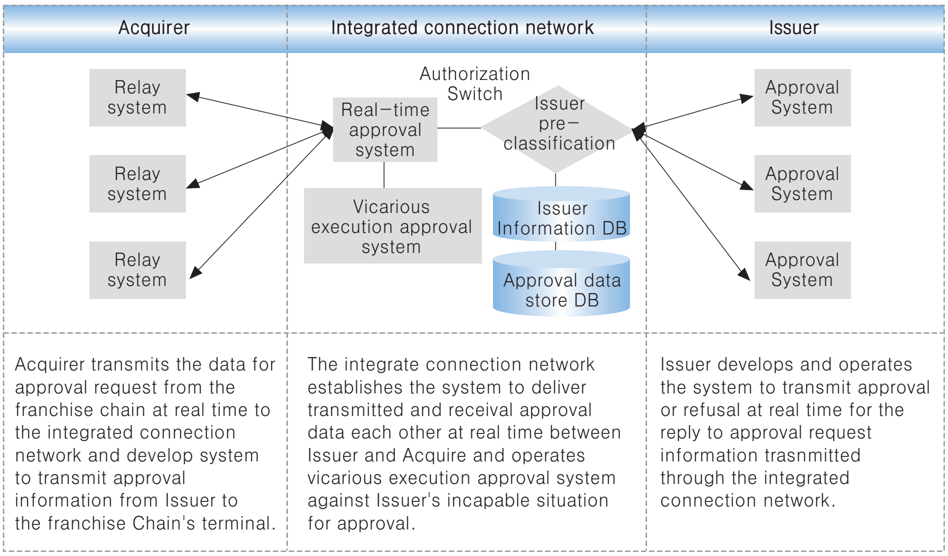
## 4.3.2 Building a real-time authorization network

The absence of a real time authorization network is considered to be the biggest obstacle in developing the credit card industry in Algeria. Specifically, the Algerian credit card industry is being developed mainly around debit cards. In absence of a real time authorization system, where the account balance can be checked immediately, frequent bouncing cases are anticipated to occur due to the lack of account balance after purchasing goods and necessities. Therefore, operating risk is very high. The key to the debit card business is how efficiently they can manage these operating risks, and thus it is very necessary to build a real time approval network as soon as possible.

As for the present condition of the Algerian authorization system, it is the most notable feature that even though SATIM has equipped completely for real time authorization, all Algerian issuers except for Algerian Post still don't have an equipped real time authorization system, which is known to cause problems for checking account balances in real time.

But, this absence of a real time authorization system by individual issuers is the problem for not only the credit card industry but also banking business. The level of banking system in almost Algerian banks is still low. They can not exchange account balance data immediately between head office and branches.

Figure 3-12 ●● Real Time Authorization System




Accordingly, each bank acting as an issuer in Algeria has to make an effort toward a whole advanced electronic system related to banking and credit cards. The construction of a real time authorization system should be promoted with the overall advance of the electronic system.

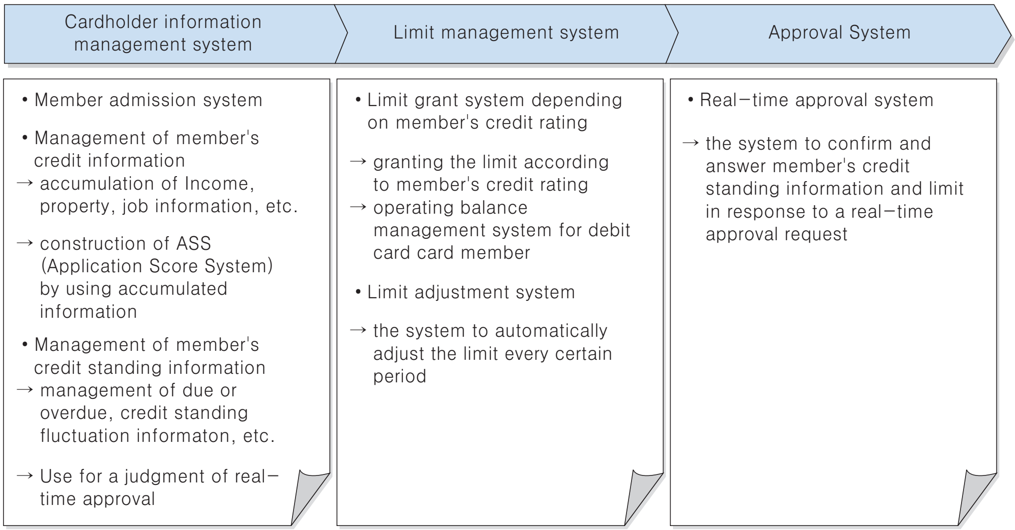
### 4.3.3 The essential system for issuing business

In order to operate issuing business smoothly, a member information management system, limit management system and real time authorization system are essential.

The member information system is the system of managing and judging general information related to the members, and issuers can set the credit limits according to members' credit rating through a limit management system.

In the case of debit cards, the limit management system acts as a tool for checking balance availability at the time of request for purchase.

Figure 3-13 ●● System Requirement for Issuing Business

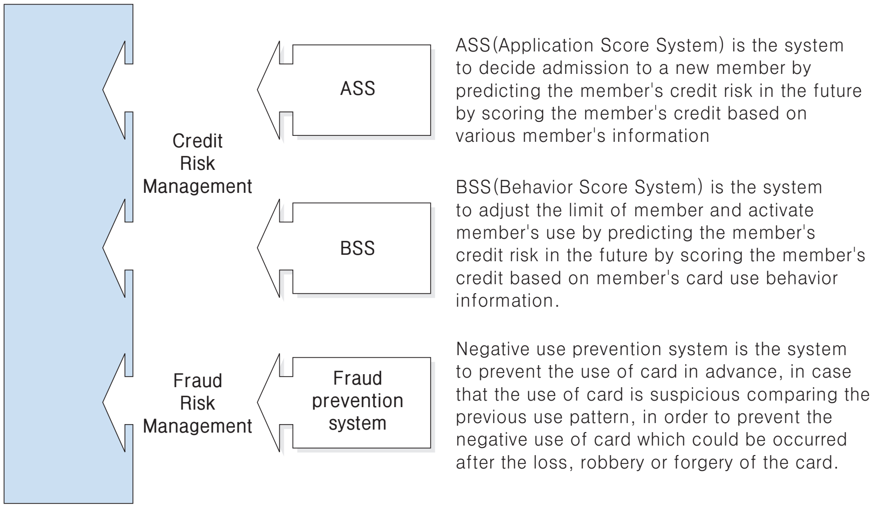



In the issuing business, besides the system for basic performance of tasks mentioned above, a risk management system to manage the diverse risk that can occur during operation of credit card business should be managed essentially.

By operating the risk management system, issuers can efficiently manage credit risk according to credit operation and fraud risk that can occur by negative use of credit cards, such as stolen and/or counterfeited cards.

For credit risk management, ASS (Application Score System), which evaluates new card members and BSS (Behavior Score System), which revaluates the members' credit rating, are operated. For fraud risk management, various fraud prevention systems are used.

Figure 3-14 ●● Risk Management System




### 4.3.4. The essential system for acquiring business

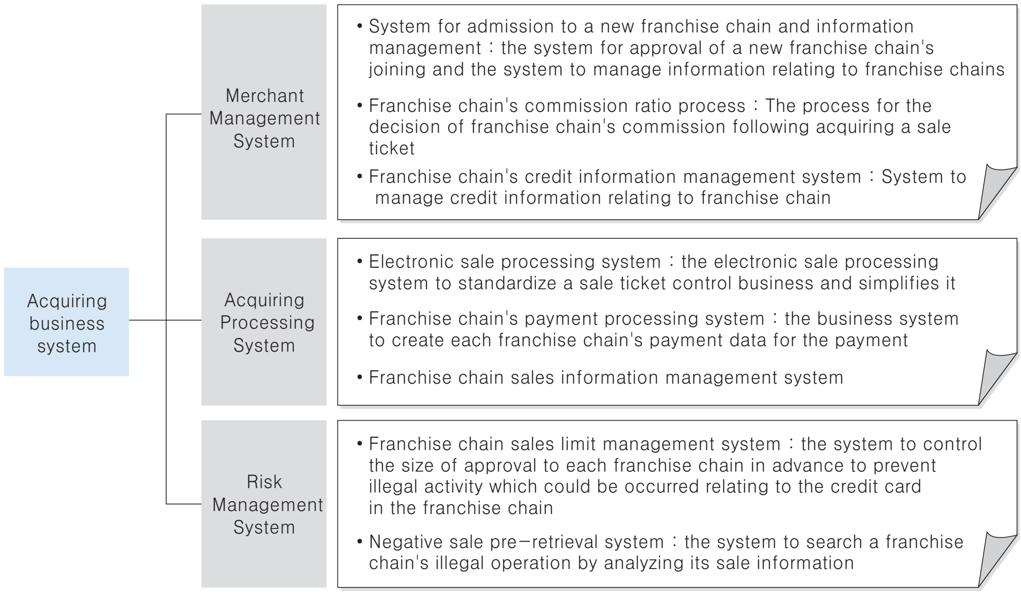
In order to accomplish acquiring business smoothly, an information management system to manage credit information related to merchants, an acquiring and payment system for credit card sales and a risk management system to manage risk that can occur in merchants are necessary.

The merchant management system is composed of the admission and information management system, the merchant fee ratio system and the merchant's credit information management system.

The acquiring processing system is composed of the electronic sale processing system, payment processing system and merchant sales information management system. In addition, malicious incidents by illegal operation of credit cards can occur in merchants as well. To prevent such incidents, it is necessary to operate a diverse risk management system.

In addition, it must be considered that Algeria's financial industry imports advanced financial systems and technology from advanced countries and cooperates with them to construct merchant infra and introduce new technology in the short term, though doing so by themselves (Algeria's financial institutions) is highly recommended for their competitiveness.

Figure 3-15 ●● System Requirements for Acquiring Business




## 4.4 Expansion of Merchant Infra and Increasing Members' Use

In examining the reasons for the depression of the Algerian credit card industry development we should consider both merchants and members. First, from a merchant perspective, the lack of merchant numbers caused by the absence of acquiring competition, the avoidance of credit cards by merchants avoiding taxation and the inferior communication environment such as the lack of wire communication are reasons.

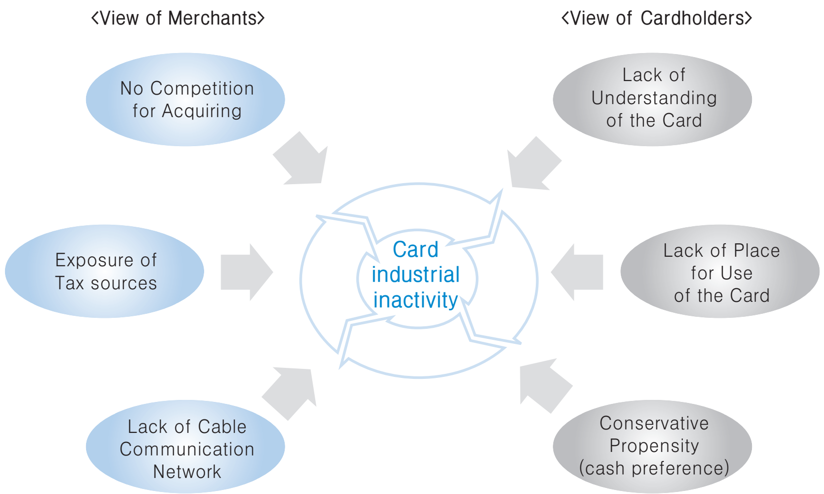
From a cardholder perspective, the lack of understanding of the convenience of credit cards, the lack of merchants where consumers can use credit cards, the conservative propensity for cash, and so on are reasons.

In resolving these problems, the development of the acquiring industry should precede everything else. It is necessary to establish a merchant network by promoting competition through a removal of monopolistic business territory and encouraging acquirers to recruit merchants and to overcome the inferior communication environment. Providing wireless terminals instead of cable terminals could be a solution.

As for members, it is necessary to continually improve diverse marketing and loyalty programs which could lure members to use credit cards and to alert them to the economic effect of credit cards in comparison with cash and to develop diverse services through connection between IC chip application and non-contact technology.

In addition, it must be considered that Algeria financial industry imports advanced financial system and technology from advanced countries in finance industry and cooperate with advanced countries to achieve the goal which are the construction of merchant infra and the introduction of new technology in short term, although doing by themselves, which means Algeria financial institutions, is much more recommended for its competitiveness.

Figure 3-16 ●● Cultural Reasons for Card Industry Inactivity

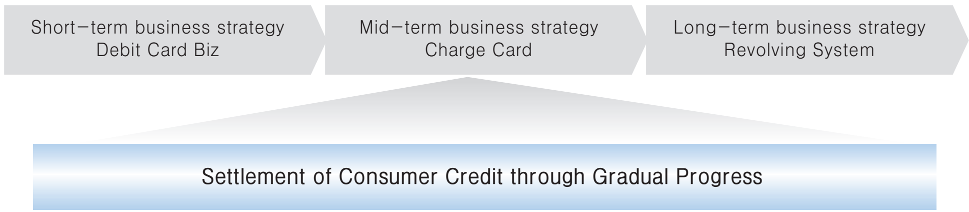


## 4.5 Gradual Introduction of Card products

The lesson for Algeria from the Korean case discussed extensively before is the fact that unprepared sudden increase in credit will increase economic risk and national difficulty could occur if it is not managed properly.

Considering these lessons and the card industry development level of Algeria and the level of understanding of Algerians about credit, the gradual introduction of card products is needed and it is desirable to progress gradually to the next step when gradually introduced card products are operating stably. These gradual introductions will certainly be helpful in settlement of consumer credit in Algeria.

Figure 3-17 ●● Gradual Introduction of Credit Card Products




### 4.5.1. Short-term business strategy: Settlement of Debit card business

Debit card business does not have any operation risk if the real-time authorization system is accomplished. Card business know-how can be accumulated through the operation of the debit card business. During this period of debit card activation, chances exist to improve the environment through merchant infra expansion, terminal supply and improvement of card image. Also, accumulation of diverse information about members and merchants for future credit card issue will occur.

### 4.5.2. Mid-term business strategy: Introduction/Operation of Charge cards

Charge cards are products that grant some credit limit to members and enable them to complete transactions during some period and allow them to pay later. These are the most fundamental type of credit card. Infra and business know-how accumulated through dealing with debit cards can be used and the base for the expansion of credit transactions by developing the system and technologies for credit risk management should be established by operating charge card products.

### 4.5.3 Long term business strategy: Introduction and operation of Revolving Service

A revolving system is a system to maintain credit transactions by repaying some ratio of payment of card use and the core of this system is risk management. It accomplishes high profitability with interest benefits, etc. arising out of the credit balance. It will be proper to introduce this system when, through the operation of charge cards, credit transactions are popular and technologies for risk management are developed in Algeria.

# Chapter 4

## Credit Risk Management in the Credit Card Business: Algerian Perspective

# Summary

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Credit risk related to credit-card customers is the main determinant of the asset value of a credit-card firm. Therefore, credit risk management of individual customers is critical to preserving financial soundness of a credit-card firm. Risk management in FIs including credit-card firms is important because mismanagement of risks brings about consequences, which go beyond the failure of a single FI. Failure of an FI causes disorder in the financial system that may have negative impacts on the real sector of the economy. In addition to this static negative externality, failure of an FI can result in dynamic negative externality: financial difficulty of an FI is likely to lead the public to lose confidence in the financial system, which may not be easily remedied. Loss of confidence in the financial system can hinder growth of the financial system, and even brings about financial disintermediation. To the extent that financial sector growth is important for economic growth, stagnancy in financial sector growth impairs growth potential of an economy.

In measuring credit risk of individuals, two types of models are found in practice: judgmental and credit scoring model. In a nutshell, credit scoring is a statistical process whereby information about a credit applicant or an existing accountholder is converted into a numerical score. This score is then regarded as a measure of the credit risk of the individual concerned. The judgmental and scoring methods of credit risk evaluation share the same objective and are based on the same sources of information. The differences between the two models are more akin to the advantages of scoring over the judgmental process. First, credit scoring is objective. It is not influenced by emotions or personal opinions of one individual. It is impersonal. The direct result of this objectivity is that credit scoring is consistent. Every application is scrutinized according to the same objective criteria in exactly the same manner. The same facts will produce the same score every time.

Credit information registries refer to a database of information on borrowers in a financial system. Information in these registries is available for individual consumers and/or firms. The core of this data is a borrower's past payment history. The evolution process and characteristics of information collection indicate that PCRs were originally developed to enable bank

supervisors to accurately evaluate credit risk in supervised financial institutions. While PCRs are found across many economies, growth of private credit registries or CBs has been confined to a few advanced economies such as the US and the UK. Having their origins in the early nineteenth century, the US CBs grew rapidly since the 1970s when deregulation occurred. In particular, it has been noted that the consumer credit industry, including the credit-card business, has interacted most dramatically with the development of the CB industry.

The credit reporting system in Korea has evolved against the backdrop of dramatic developments in the overall financial system, which includes two financial crises (the economic crisis of 1997 and the credit card crisis of 2003) and the steeply rising trend in consumer debt. The credit reporting system came into existence in Korea in 1955 when the Bank Supervisory Office introduced the compulsory reporting system. The Bank Supervisory Office collected delinquent credit information, which banks were obligated to provide, and shared the negative information with participating banks. Although the system was de facto a public credit registry system, no formal legislation existed to support the system. Instead, an MOU among banks and the supervisory office, named “MOU on Delinquent Loans”, specified operation provisos of the system. Mainly due to operation convenience, the public registry function was transferred to the Bank Association.

It was only in 1995 when a formal legal framework under the name of “Use and Protection of Credit Information Act (UPCIA)” was introduced in Korea regarding the credit reporting system. The “Use and Protection of Credit Information Act (UPCIA)” introduced the legal concept of ‘business of credit information evaluation”. The intention of legislation was to form a legal environment in which a ‘credit bureau’ could flourish as it did in Anglo-American economies. Three CB’s have been established until now. Public expectations for CB’s are two-fold. First, they are expected to broaden the set of credit information in circulation so that not only negative but also positive information is available for financial institutions. Secondly, it is hoped that CBs act as a development centre for generic and benchmark credit scoring models. History in the US shows that development of credit scoring models has always been driven by credit bureaus or model development firms for CB’s. As they have been established only very recently, whether Korean CB’s will grow and fulfil the public expectations is yet to be seen. Nonetheless, under a fully liberalized market environment, it seems that Korean society does not have alternatives other than developing CB’s to facilitate the development of the credit reporting system.

Algeria currently is in the process of setting up a PCR for individuals under the central bank, Bank of Algeria. The PCR is planned to collect positive and negative information from participating financial institutions that include all the credit providing institutions except insurance companies. Collected information is to be shared among participating institutions. We suggest that, as the first step to establishing a credit information reporting system, the plan for setting-up the PCR should be implemented as planned.

Further, in implementing the plan, we emphasize that due attention should be paid to maintaining the reliability of collected information. Collection and sharing of credit information on individuals may face opposition from the public, unless the reliability of information and the fairness of information usage are trusted. In fact, a prerequisite for a sustainable credit reporting system is the existence of public trust in it. The PCR should aim at gaining public trust as well as constructing credit reporting infra per se.

The ultimate purpose of a credit reporting system is to provide better infra for credit risk management of financial institutions. Circulation of credit information will bring about final benefits to a financial system only when it is accompanied by well-functioning credit risk measurement models which will make use of information available through the credit reporting system. A typical problem that a developing economy faces, which is relevant also for Algeria, is that neither a credit reporting system nor a credit risk measurement model exists. Considering this, in parallel to setting up a PCR, a plan to foster capacity of the Algerian financial system to develop credit risk measurement models should be prepared and executed. In this regard, we suggest that Algeria should establish a credit bureau. Considering the current governance of the Algerian financial system, the credit bureau may be established either directly by the state as a public company or by banks under guidance from the government.

Together with building up the hardware, it is important to improve software aspects of risk management in the financial system. Firstly, training of human resources is critical to the development of risk management capacity. Korean experiences suggest that introduction of hardware aspects of risk management is easier. In the long run, building up of expertise requires improvement of the general human capital accumulation process. In the short run, retraining of current human resources is essential. We suggest that Algeria should prepare and implement a plan for human resource (re)training programs. Next, identifying and spreading best practices for risk management are equally important. The effort is appropriate considering that risk management in financial institutions includes various internal decision making and practices going beyond model development and credit scoring. We suggest that Bank of Algeria, which is in charge of setting-up a PCR, should prepare and implement a plan for best practice spreading.

# 1. Concepts of Credit Risk Management

## 1. 1. Introduction

### 1.1.1. Risks

Risk can be defined as the volatility of unexpected outcomes, generally the value of assets or liabilities of interest. Corporations are exposed to three types of risks: business, strategic, and financial risks. Business risks are those that corporations willingly assume to create a competitive advantage and add value for shareholders. Business or operating risk pertains to the product market in which a firm operates, and includes technological innovations, product design, and marketing.

In contrast, strategic risks are those resulting from fundamental shifts in the economy or political environment. Such an example was the rapid progress of globalization that led to integration of financial markets around the world and co-movement of business cycles among industrial countries.

Financial risks relate to possible losses in financial contracts or transactions. Movements in financial variables such as interest rates and exchange rates create risks for most corporations. Exposure to financial risks can be carefully optimized so that firms can concentrate on what they do best - manage exposure to business risks. In contrast to industrial corporations, the primary function of financial institutions is to actively manage financial risks. Risk management is the process by which various risk exposures are identified, measured, and controlled.

### 1.1.2. Financial Risks of Financial Institutions

Credit risks arise because of the possibility that promised cash flows on financial claims held by FIs (financial institutions), such as loans or bonds, will not be paid in full. In order to minimize the potential loss FIs can experience, FIs need to monitor and collect information about borrowers over time.

Market risks arise when FIs actively trade assets and liabilities (and derivatives) rather than holding them for longer-term investment, funding, or hedging purposes. Market risk is closely related to interest rate, equity return, and foreign exchange risk in that as these risks increase or decrease, the overall risk of the FI is affected.

Liquidity risk takes two forms: market liquidity and cash flow. The first type of risk arises when a transaction cannot be conducted at prevailing market prices due to insufficient market activity. The second type of risk refers to the inability to meet cash flow obligations, which may force early liquidation.

Funding risk can be controlled by proper planning of cash flow needs, which can be controlled by setting limits on cash flow gaps and diversification.

Operational risks refer to potential losses resulting from inadequate systems, management failure, faculty controls, fraud, or human error. Operational risk also includes technological risk, which refers to the need to protect systems form unauthorized access and tampering. The best protection against operational risks consists of redundancies of systems, clear separation of responsibilities with strong internal controls, and regular contingency planning.

Legal risks arise when a counterparty does not have the legal or regulatory authority to engage in a transaction. It can take the form of shareholder lawsuits against corporations that suffer large losses. Legal risks also include compliance and regulatory risks, which concern activities that might breach government regulations, such as market manipulation, insider trading, and suitability restrictions.

### 1.1.3. Credit Risk Management in the Credit-card Business

Credit risk related to credit-card customers is the main determinant of the asset value of a credit-card firm. Therefore, credit risk management of individual customers is critical to preserving financial soundness of a credit card firm.

Risk management in FIs including credit-card firms is important because mismanagement of risks brings about consequences, which go beyond the failure of a single FI. Failure of an FI causes disorder in the financial system that may have negative impacts on the real sector of an economy. In addition to this static negative externality, failure of a FI can result in dynamic negative externality: financial difficulty of an FI is likely to lead the public to lose confidence in the financial system, which may not be easily remedied. Loss of confidence in the financial system can hinders growth of the financial system, and even brings about financial disintermediation. To the extent that financial sector growth is important for economic growth, stagnancy in financial sector growth impairs growth potential of an economy.

### 1.1.4. Components of Credit Risk Management in the Credit Card Business

Three components are involved in the management of individual customers' credit risk in the credit card business: business strategic component, technical/model component, and environmental component. The latter two components are subjects for discussion in this paper.

- The business strategic component refers to the aspects of internal credit risk management that are related to business risk/managerial decisions. Selection of target markets, financial products, target loss rate and value at risk are all included in this category.
- Technical component refers to the internal capacity for measuring credit risks contained in the asset of an FI. Model capacity, human resource in risk management, and internal database constitute the core of this component.
- Environmental component refers to the external environment that affects the availability

of data for measurement of credit risk of an FI.

## 1.2. Measurement of Credit Risk

### 1.2.1. Measurement Models

#### *1.2.1.1. Judgmental Method*

In the absence of publicly available information on the quality of customers, the credit risk manager has to assemble information from private sources. In general, the amount of information assembled varies with the size of the potential debt exposure and the cost of collection. However, a number of key factors enter into the credit decision. The credit risk manager then weighs these factors subjectively to come to an overall credit decision. Because of reliance on the subjective judgment of the risk manager, these models are often called expert systems.

#### *1.2.1.2 Credit Scoring Model*

In a nutshell, credit scoring is a statistical process whereby information about a credit applicant or an existing accountholder is converted into a numerical score. This score is then regarded as a measure of the credit risk of the individual concerned (i.e. the probability of repayment).

A typical credit application may ask for as many as fifty separate pieces of information. Some application questions can be answered with a Yes or No, but most have a variety of answers. If there are even as few as two possible answers to each of the 50 questions, there are more than one quadrillion (that is a one followed by 15 zeros) different combinations of information that might appear and for each combination a decision must be reached. This immense amount of information would be challenging for any judgmental process.

Credit scoring, on the other hand, addresses exactly this diversity. Furthermore, it is fully explainable. All of the factors that go into a scorecard's construction are open to examination, and the methodology used to arrive at the computations can be reviewed in minute detail.

<Table 4-1> illustrates an example of how a typical applicant may be reviewed using both the judgmental process and credit scoring. An individual credit officer has his or her own ideas of positive and negative aspects of an applicant's credit record. These are shown by the "+" and "-" signs. Credit scoring, on the other hand, assesses not only whether an attribute is positive or negative, but also by "how much." The weight values associated with each answer (or "attribute") are derived using statistical techniques that look at the odds of repayment based on past performance.

As shown in the <Table 4-1>, FIs use two types of scores: (1) those based exclusively on the credit history of individuals as reflected in credit bureau records/scores: (2) those based on other factors in addition to credit history. The former are commonly called "bureau scores" or "credit history scores" while the latter are often referred to as "application scores" or "origination scores".

Once credit score is obtained for an individual, credit decision with respect to the individual is nearly automatic: if the given score is above the "cutoff level", credit is provided; otherwise, credit provision is denied.

The judgmental and scoring methods of credit risk evaluation share the same objective and are based on the same sources of information. Both systems seek to make a decision as to whether an applicant is a "Good" or "Bad" credit risk. Both systems use historical credit performance data on the assumption that the factors which were related to "Good" or "Bad" behavior in the past will remain so in the future.

The differences are more akin to the advantages of scoring over the judgmental process. First, credit scoring is objective. It is not influenced by the emotions or personal opinions of one individual. It is impersonal. The direct result of this objectivity is that credit scoring is consistent. Every application is scrutinized according to the same objective criteria in exactly the same manner. The same facts will produce the same score every time.

There is also the advantage of management control. It is difficult for a judgmental operation to reduce losses or expand volume with any degree of certainty. In many cases, when losses begin to climb, the credit division "tightens up." However, a tight credit policy can lead to meager volumes.  A more effective means of management control is the balance of loss (risk) versus volume, and credit scoring helps achieve this balance. A statement such as, "Reduce the lowest acceptable application credit score from 214 to 205," is one that everyone can understand and execute in a consistent manner.

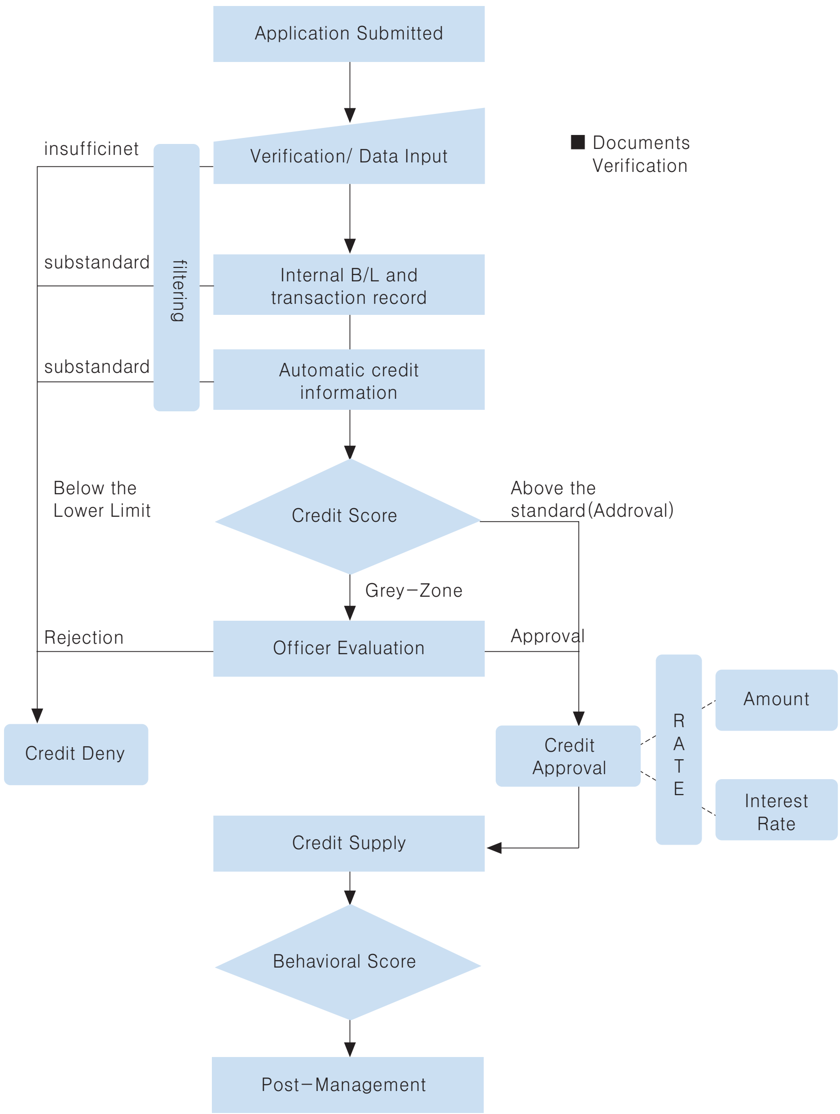
Table 4-1 ●● Illustration of Two Credit Risk Evaluation Methods

| Characteristic | Attributes | Judgemental #1 | Judgemental #2 | Scorecard |
|---|---|---|---|---|
| Time at Current Employer | 10 years | + | + | 47 |
| Residentail Status | Rent | - | - | 30 |
| Number of Inquiries | 4 | - | + | 27 |
| % of Balance to Avail. Credit Lines | 45% | + | - | 45 |
| # of Major Derogs | 1 | + | - | 28 |
| Credit Bureau Risk Score | 670 | + | 1 | 40 |
| Total | | + | 1 | 217 |
| Overall Decision | | Accepted | Rejected | Accepted |
| Odds of Repayment | | | | 11:1 |

Table 4-2 ●● Comparison of Two Credit Risk Evaluation Methods

| Similarities | Differences |
|---|---|
| Based on Same Information | Objectivity |
| Evaluate Credit Risk | Consistency |
| Make Decision | Management Control |

Figure 4-1 ●● Credit Risk Evaluation based on a Credit Scoring Model



## 1.2.2. Data Requirements for Credit Scoring Models

### *1.2.2.1. Score Card*

When we refer to a scorecard, we are talking about a mathematical model which is used to assess credit risk. The model assigns a numeric score weight to each attribute in an applicant's file. These score weights are then added together to provide a total final credit score. If the score is equal to or greater than the lender's cutoff score, the applicant represents an acceptable level of risk.

Anyone who has ever seen a horse race is familiar with the concept of odds. In fact "odds" is just another way of saying "probability." It defines the ratio of one event (e.g., winning a horse race) to another. For example: if a horse has 11:1 odds, then the probability of it winning the race is one in twelve, or 8.3%.

In credit scoring, "odds" is used as an expression of credit risk. It is the ratio of one event (in this case an account being "Good") to another (an account being "Bad"). For example, an applicant with 11:1 odds has an 8.3% probability of being "Bad" (by which we may mean serious delinquency or charge-off).

Because the score rendered by a scorecard is a reflection of the odds of repayment, it is a highly effective tool for selecting applicants with an acceptable level of risk. A high credit score indicates a high probability that the applicant will successfully meet the terms of the loan agreement over the lifetime of the loan; a low credit score indicates an account that is more likely to end up in charge-off.

Credit risk scorecards look at items of information that can be extracted from applications and credit bureau reports. These items are called characteristics. They are usually thought of as the questions on a credit application or the entries in a credit bureau report.

The answers given to questions on an application and the entries on a credit report are known as attributes. For example, 3 is an attribute of the characteristic Time at Address. Similarly, 32 is an attribute of the characteristic Age.

Below is an example of a typical application scorecard. This example scorecard includes the credit bureau score as a characteristic. An application scorecard may or may not include the credit bureau score, depending on the lender's preference.

### *1.2.2.2. Key Variables in the Score Card*

<Table 4-3> does not show much information on which credit variables are used in computing credit scores because they are bunched under the category of 'credit bureau information.' It is known that four sets of variables play a key role in a standard credit scoring model. The first three are 'positive' information while the last 'negative' or 'black' information.

1. *Outstanding Debt and Types of Credit in Use*: People who are heavily extended tend to be

at higher risks than those who use credit conservatively. Also the amount of unused credit is an important factor in calculating credit scores.

2. *Outstanding Debt and Types of Credit in Use*: The longer someone has had credit established, the better his or her credit score. For example, a borrower who has had credit for less than two years represents a relatively higher risk than someone who has had credit for five years or more.
3. *New Applications for Credit (inquires)*: The more frequently individuals apply for new credit, the lower his or her credit score will be. This is so because new applications for credit have been found to be a characteristic of a person experiencing deterioration in credit worthiness.
4. *Late Payments, Delinquencies, and Bankruptcies*: The fewer late payments, the better the credit score. Further, if there are late payments, those that are most recent are most indicative of future default than those that occurred in the past.

Table 4-3 ●● Example of a Score Card

| | Score | | |
|---|---|---|---|
| **Age** | | **Time at Address** | |
| 18 - < 21 | 6 | < 1 year | |
| 21 - < 30 | 10 | 1 - < 3 years | |
| 30 - < 40 | 28 | 3 - < 6 years | |
| 40 - < 50 | 35 | 6 - < 10 years | |
| 50 - or more | 42 | 10 or more years | |
| No Information | 10 | No Information | |
| **Number of Dependents** | | **Time at Employer** | |
| 0 | 14 | < 6 months | |
| 1 | 14 | 6 months - < 3 years | |
| 2 | 25 | 3 - < 5 years | |
| 3 or more | 10 | 5 or more years | |
| No Information | 14 | No Information | |
| **Martial Status** | | **Credit Card Reference** | |
| Single | 14 | Yes | |
| Married | 30 | No | |
| Divorced | 5 | No Information | |
| Others | 14 | | |
| No Information | 14 | | |
| **Residential Status** | | **Credit Bureau Information** | |
| Own | 40 | Yes | |
| Rent | 15 | No | |
| Live with Parents | 20 | No Investigation | |
| Employer Provided | 22 | No Information | |
| No Information | 20 | | |

### *1.2.2.3. Construction of Database*

Construction of a database required for an efficiently functioning credit scoring model is a demanding job. It takes more than several years. In fact, it is the lack of adequate database rather than the lack of a model per se that hinders a developing economy from implementing model-based credit risk management. Below, I illustrate a standard procedure for database construction.

1. We begin by collecting data from accounts that were booked during a defined Observation Period. Credit bureau data and application data are collected and merged for each account, if available.
2. The time from the end of the Observation Period to the Performance Date is known as the Performance Period. It is important to ensure that the Performance Period is sufficiently long to provide an accurate assessment of account performance (e.g., a "Bad" account may not show signs of poor performance until several months after booking). However, the Performance Period should not be so long that the data collected during the Observation Period loses its relevance to the population upon which the scorecards will be implemented. It is recommended that the Observation Period cover at least an entire calendar year's worth of performance in order to avoid seasonal bias in the data. The account population selected for development should be both stable and homogenous. By stable, we mean that the lender's organization has been operating in more or less the same manner over the entire development period. If major changes were made to operating procedures during either the Observation or the Performance Period - for example, if the lender expanded into a new geographical market, resulting in a short term flood of applications - the nature of the "Good" and "Bad" accounts will be different than if the population had been unchanged. By homogeneous, we mean that the population of interest has been offered only one credit product over the development period. For example, a mixed population of secured and unsecured credit products is less satisfactory as a base for a scoring system than a population using either secured or unsecured credit alone.
3. One of the crucial steps in setting model criteria is defining account performance. In theory, a "Good" account is one that you are glad you booked, and a "Bad" account is one that you wish you hadn't booked. As you might imagine, charge-offs and excessive delinquencies typically fall into the "Bad" category. "Indeterminates" are the accounts which are neither "Good" nor "Bad." These accounts constitute the gray area where there may be differing opinions as to whether you would have booked them if you had known how they would perform. "Exclusions" are the accounts you do not wish to include in the scorecard development. Examples include fraudulent accounts, accounts where the borrower passed away during the performance period, and employee accounts. "Exclusions" may also include accounts that qualify as "Good" but have not had sufficient

time on the books to be considered "Good." These accounts are often referred to as "Insufficients."

## 1.3. Credit Reporting System

"Credit reporting system" refers to the broader institutional framework for credit reporting in an economy, including the following: (1) the credit information registry; (2) legal and regulatory framework for credit reporting; (3) legal framework for privacy as it relates to credit reporting and other pertinent borrower information such as court records, utility payments, and employment.

### 1.3.1. Credit Information Registry

Credit information registries, commonly known as credit bureaus in many countries, can reduce the extent of asymmetric information by making a borrower's credit history available to potential lenders. Lenders armed with this data can avoid making loans to high risk individuals with poor repayment histories, defaults, or bankruptcies. Once a lender makes a loan, the borrower knows that their performance will be reported to the credit registry. The information contained in a credit registry becomes part of the borrower's "reputation collateral". At the same time, by reducing the information monopoly that banks have over their existing borrowers, consumers also benefit.

Formally, the term 'credit information registry' refers to a database of information on borrowers in a financial system. Information in these registries is available for individual consumers and/or firms. The core of this data is a borrower's past payment history. The information available may be only negative (information on late payments, defaults, and other irregularities), or it may also contain positive information such as timely repayment of credit and loans. Registries may also contain other types of information, including basic personal information such as address and birth date, as well as information from court records or other public or government sources, which could have a bearing on creditworthiness.

Credit registries operated by governments, usually by bank supervisors, are referred to as public credit registries (PCRs). Those registries operated outside the government are referred to as private registries or credit bureaus (CBs).

#### *1.3.1.1. Public Credit Registry*

The evolution process and characteristics of information collection indicate that PCRs were originally developed to enable bank supervisors to accurately evaluate credit risk in supervised financial institutions. Later, as demand for credit information arose in the private FIs, PCRs began sharing their database with information providers or FIs.

Public credit registries have their genesis in Europe. Germany established the first PCR in 1934, followed by France in 1946, Italy and Spain in 1962, and Belgium in 1967. PCRs have spread to the less developed economies in the last decade. As a result, in most developing economies PCRs can be spotted. PCRs worldwide share a basic framework in their institutional arrangements, the type of data collected, and typical policies about the distribution of credit data to participating financial institutions. Most PCRs are operated by the central bank or bank supervisors, and the financial institutions they supervise are compelled to participate by means of a law or regulation. As a result, the greatest source of data for most PCRs is the commercial banking sector. Institutions are required to report on a regular basis, typically monthly, and usually on both their commercial and consumer borrowers. Most European PCRs collect negative information such as late payments and defaults. When positive information on credit exposure is collected, there often exists coverage restriction. The most common exclusion on positive information is for loans below a minimum amount. This strongly indicates that early PCRs in European economies were developed to assist in bank supervision.

### *1.3.1.2. Private Credit Registry/Credit Bureau*

While PCRs are found across many economies, growth of private credit registries or CBs have been confined to a few advanced economies such as the US and the UK. Having their origins in the early nineteenth century, the US CBs grew rapidly since the 1970s when deregulation occurred. In particular, it has been noted that the consumer credit industry, including the credit-card business, has been most dramatically linked with the development of the CB industry. In the US, broad access to consumer credit products is widely recognized as the consequence of four simultaneous and interdependent factors:

- Legal rules that permit the collection and distribution of personal credit data to those with an authorized purpose for requesting the information
- Dramatic reductions in data processing costs and equally dramatic improvements in the speed of data retrieval
- The development of statistical scoring techniques for predicting borrower risk
- The repeal of legislated interest rate ceilings that had limited the ability of creditors to price their loan products according to risk

The bank credit card market provides a useful illustration of how and why these combined forces worked to broaden access to credit card products. From 1985 to 1991, a wave of new entrants into the bank credit card market in the US put greater downward pressure on card interest rates and annual fees. Credit bureau data were critical to this explosion in competition both as a way to identify potential customers and to offer them attractive but profitable pricing. New entrants used credit bureau data to identify and target low-risk borrowers for their low rate cards. Existing issuers saw customer attrition escalate, particularly in the lowest risk categories.

Competition forced incumbent issuers to make a choice: either leave the interest rate unchanged and risk defection of their customers to the new, low-rate entrants or cut interest rates and fees as a defensive measure.

#### *1.3.1.3. Public Credit Registry vs. Private Credit Registry/Credit Bureau: 'Substitution' or 'Complement'*

Given the coexistence of PCRs and private registries, it is natural to ask about their relationship. Economists investigate whether or not PCRs are created to remedy the lack of private credit bureaus or the poor protection of creditor rights. If PCRs are created to remedy the lack of private initiative, the pre-existence of a credit bureau should be negatively related to the presence of a PCR. Using the sample consisting of European countries, they state that the establishment of PCRs has largely been motivated by the 'substitution' role. They further suggest that in countries with a legal system based on Napoleonic code, where creditor rights receive less protection, public registries are more likely to evolve. However, a survey on developing countries suggests that this case might not be relevant for developing economies: it is found that many Latin American nations established their PCRs after the private sector registry. Further, the survey reports that there are significant differences in PCRs and CBs in their functions. What the survey results indicate is that stage of economic development may matter; and that broader institutional context where an economy is located may dictate the path of the credit reporting industry. At the bottom, the challenge given to policy makers is how to establish a well-functioning information sharing mechanism. If spontaneous development of CBs occurs, necessity of public intervention is limited. Otherwise, a more extensive role for public authority may be warranted. Despite this general rule, still it proves challenging to locate an optimal scope for PCR's role. This is so, once lager functions are allocated to PCRs, naturally it discourages evolution of CBs. Thus, as long as one views the monopoly of PCRs in credit information sharing, finding a 'right' role for PCRs is an important agenda for policy makers in developing economies where CBs are yet to emerge.

### 1.3.2. Legal Framework: Privacy vs. Access to Information

A country's legal and regulatory framework for data protection and credit reporting has an enormous impact on how, and even whether a credit reporting industry develops. At first glance, it may appear that data protection laws and credit reporting activities pull in opposite directions, but that is not necessarily the case. When the role of personal data in an economy is analyzed, two fundamental concerns must be concerned and balanced: privacy protection and access to information. Access to information contributes to transparency and competition in an economy and may even be identified with basic rights, such as freedom of speech and freedom of the press. At the same time, the constitutions of most nations recognize individuals' right to privacy. For a credit reporting industry to develop, consumers and businesses must be willing to share their data and participate in the system. Reasonable legal and regulatory safeguards on data sharing can help to strengthen consumer confidence in the system as well as help to maintain the integrity of private and public reporting activities.

The importance of providing adequate legal protection for data about individuals has been recognized by international organizations for more than twenty years. In 1980, the OECD issued a document “Guidelines for Privacy and Transborder Personal Data Flow Protection.” This was followed by the Council of Europe’s 1981 convention on Personal Data Protection. In 1990, the United Nations extended these principles to the larger international community by adopting “Guidelines for Personal Data Automated Files.” The OECD, Council of Europe, and UN guidelines share the same basic objectives. They cover information held by both the public and the private sector, and they are designed to protect individual rights and freedom, while at the same time preventing undue restrictions from being imposed on the transmission of data.

The basic rights established by these international guidelines include: (1) the individual’s right to know, obtain, and dispute his or her personal information in the possession of data controllers; (2) limits on the collection, use, and withholding of data on individuals and; (3) the data controllers’ obligation to specify the purpose of the data records, maintain high standards of information quality (accurate and updated), adopt measures to control inappropriate access or use of the data, and inability for the data they control. The guidelines are intended as a framework or set of common principles that countries can use to develop their own laws and regulations, including the establishment of enforcement mechanisms.

# 2. Korean Experiences

## 2.1. Brief Historical Perspective on the Korean Financial System

### 2.1.1. Liberalization during the 1980s and the 1990s

Throughout the 1960s and the 1970s, domestic financial markets and institutions had been subject to heavy regulation and intervention of the government. Interest rates were regulated while credit allocation was largely at the hand of the government that owned banks. In the 1980s, the government began reforming policies aimed at improving financial market efficiency. In particular, two policy measures are notable: liberalization and fostering of direct financial market.

Regarding interest rate deregulations, piecemeal attempts to deregulate interest rates can be found since 1981 when commercial paper (CP) was introduced in Korea without any restriction over issuance rates. But, shortly after CP rates became subject to regulation as the government perceived excessive rate increases. In 1984, banks were permitted to charge different lending rates within a limited range. Also, call rates and yields on convertible bonds were deregulated. Interest rates on certificates of deposit (CDs) and financial debentures issued by banks were subsequently deregulated.

However, a significant advance toward interest rate liberalization occurred in December 1988 when most of the lending rates of banks and non-bank financial institutions were liberalized. Even though the government effectively resumed interest regulations in 1989, when the interest rate became unstable as a result of high inflation, most people regard the official declaration of interest liberalization in 1988 as the first step in this reform measure.

In August of 1991, the government announced a more detailed plan for interest liberalization, “The Four-Stage Interest Rate Deregulation Plan” in order to promote competition and enhance efficiency of resource allocation. In accordance with this agenda, the government implemented the first stage in November 1991. As a result, those interest rates that were already close to market rates were deregulated. Included in the plan were lending rates for bank overdrafts, discounts on commercial bills, trade bills, and CPs, deposit rates for CDs, large-amount commercial CPs, and repurchase agreements (RPs). In the second round of the liberalization in November 1993, all lending interest rates and the deposit interest rate for more than two years of maturity were deregulated, and the bond rate was also liberalized. The third and fourth rounds of the liberalization were enforced in July 1994 and July 1997 respectively and interest rates for the rest of financial products were deregulated.

All commercial banks in Korea were government-owned until the Korea Commercial Bank was first privatized in 1972. And in the early 1980s the government began actively divesting its stake in other government-owned banks based on the premise that establishing a market-based ownership and governance structure should be the first step to improve efficiency of financial markets. As a result, all of the government-owned commercial banks were privatized in the 1980s. Through the 1990s, most of the government-owned special purpose banks were transformed into commercial banks and privatized subsequently.

The development of the capital market yielded more pronounced and lasting impacts on financial markets and industry. The major motivation for capital market development was to provide firms with alternative sources of funding and to mitigate the concentrated ownership structure of the industrial sector, particularly conglomerates in Korea (often dubbed as chaebols). The main focus of the government's effort was given to the development of the corporate bond market and stock market. Most notably, institutional investors such as investment trust companies and bank trust departments were established in the late 1970s and the early 1980s. These financial intermediaries in direct financial markets rapidly increased their share in financial flows.

### 2.1.2. Financial Restructuring in Response to the Financial Crisis of 1997

As noted above, the government divested nationalized banks over the three years from 1980 to 1983 based on the premise that establishing a market-based ownership and governance structure should be the first step to improve the efficiency of financial institutions and markets. The privatization of banks, however, did not produce the intended effects as the government continued its old practices to intervene in the financial sector in the context of industrial policy. For instance, in the early 1980s, the government effectively bailed out financially-troubled strategic industries, such as shipbuilding, construction and shipping industries among others, using commercial banks as agents, not to mention the provision of special loans by the Bank of Korea (BOK). Consequently, the government remained as the implicit controlling party of banks despite the fact that banks were privatized.

In addition, the rapid expansion of the non-banking sector continued throughout the 1990s as entry barriers in the sector kept being lowered. Accordingly, competition for funds intensified between banks and non-banks. These developments, in conjunction with retarded internal governance of banks, undermined the profitability of banks and made the financial sector vulnerable to cyclical shocks. However, the regulatory and supervisory system failed to properly respond to the situation. Capital account liberalization took place under this shaky environment, exposing the economy to potential systemic risks that were eventually realized in the 1997 crisis.

While the past financial system effectively continues, financial markets of the Korean economy were gradually opened to global markets. As the Korean economy achieved fast economic growth, internal demand for low cost capital in the private sector kept rising, which was strengthened by liberalization pressures from capital exporting countries. Hence, in tandem with the reform of the exchange rate policy in 1990, capital account liberalization was considered in its own right for the first time and the government began adopting various liberalization measures.

With the benefit of hindsight, the adopted approach may be summarized as follows: 1) liberalize capital flows by domestic banks first, 2) liberalize trade related short-term capital flows for non-financial corporations, 3) for other capital flows, either defer liberalization or liberalize with restrictions. It seems that the major rationale behind the policy stance had much to do with the government's concern about macroeconomic stability, particularly the adverse impact of substantial capital inflows on the exchange rate, export competitiveness, and inflation, etc. Given the concern, the government apparently preferred gradual liberalization as a way of controlling associated risks and, in particular, intended to utilize banks as risk manager. As a result, other than domestic banks, liberalization was limited.

Specifically, overseas issuance by domestic firms of foreign currency denominated bonds was deregulated in 1991. And in January 1992, the Korean stock market was opened to foreign investors. Commercial borrowings by domestic firms from foreign agents, which had been prohibited since 1986, were allowed in 1995. However, both explicit quantity restrictions and discretionary or informal controls remained prevalent. For equity investment, a 10 percent aggregate ceiling on the foreign ownership of listed firms was imposed, which continued to exist until the outbreak of the financial crisis of 1997. With regard to commercial loans by firms, restrictions on the uses of funds existed and government approval was required. Likewise, the overseas issuance by domestic firms of foreign currency denominated bonds was subject to discretionary quantity control. Thus, most capital flows led by firms or through the stock market were not free from explicit or implicit quantity control. Moreover, capital flows in other forms and domestic financial markets other than the stock market remained closed. Exceptions were trade-related short-term financing and foreign currency borrowings of banks. Various restrictions on deferred import payments and the receipt of advance payments for exports were lifted step by step without additional discretionary control over the 1990s. For banks, no explicit quantity regulations existed on long-term or short-term borrowings in foreign currencies. Though the government imposed informal quantity restrictions until the mid-1990s, even the discretionary control disappeared around 1994.

When Korea acceded to the OECD in 1996, the gradual approach toward capital market liberalization and financial market opening remained intact. The Korean economy fell victim to the twin crisis of a banking and a currency crisis in late 1997. Facing the system-wide financial crisis, in 1998 the Korean government embarked on full-blown financial sector restructuring based on a governmental initiative. In April of 1998 the FSC, the Korean supervisory authority, ordered the twelve commercial banks that failed to meet the BIS capital ratio of 8 percent to submit rehabilitation plans. In June, after assessing the rehabilitation plans, five small banks were found non-viable and their rehabilitation plans rejected. The FSC ordered the five banks to close down and transfer their assets and liabilities to relatively sound banks under a purchase and assumption (P&A) arrangement. The remaining seven banks' rehabilitation plans were approved conditional on the progress of internal restructuring and public-fund based assistance, as their closedown would entail system risk. The FSC replenished the capital bases of the seven banks through the KDIC and disposed of their non-performing assets through the KAMCO. Later, as a restructuring measure, M&As among the seven banks were promoted, resulting in three larger banks. In fact, even relatively sound banks such as Kookmin and Korea Housing Bank were encouraged to consolidate. As a result, as of June 2002, the number of commercial banks sharply decreased to twenty from thirty-three in 1997 <Table 4-4>.

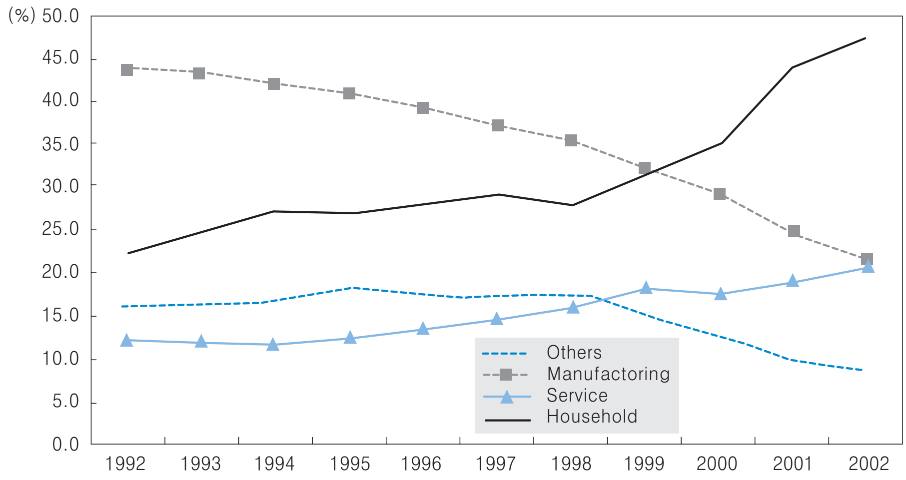
Table 4-4 ●● Restructuring of Financial Institutions (as of June 2002)

| | No.of Institutions (end of 1997) (A) | Restructuring | | | | | New Entry | No. of Institutions (end of 1997) (A) |
|---|---|---|---|---|---|---|---|---|
| | | Licenses Revoked | Merger | Dissolution | Total (B) | Ratio(%) (B/A) | | |
| Bank (C) | 33 | 5 | 9 | - | 14 | 42.4 | 1 | 20 [1] |
| Merchant Bank | 30 | 18 | 6 | 4 | 28 | 93.3 | 1 | 3 |
| Securities Companies | 36 | 5 | 2 | 1 | 8 | 22.2 | 16 | 44 |
| Insurance Companies | 50 | 7 | 6 | 2 | 15 | 30.0 | 9 | 44 |
| Investment And Trust Companies | 30 | 6 | 1 | - | 7 | 23.3 | 8 | 31 |
| Mutual Saving and Finance Companies | 231 | 74 | 27 | 25 | 126 | 54.5 | 12 | 117 |
| Credit Unions | 1,666 | 2 | 102 | 319 | 423 | 25.4 | 9 | 1,252 |
| Leasing Companies | 25 | 9 | 1 | - | 10 | 40.0 | 4 | 19 |
| Non-Bank(D) | 2,068 | 121 | 145 | 351 | 617 | 29.8 | 59 | 1,510 |
| Total(C+D) | 2,101 | 126 | 154 | 351 | 631 | 30.0 | 60 | 1,530 |

Note : 1. Would be '17' if banks under the same financial holding company is counted as one.
Source: Public Fund Management Committee, Ministry of Finance and Economy, White Paper on Public Fund, 2002.

Recovery of banks was accompanied by a major change in loan portfolios. During Korea's economic development era, banks channeled funds to large manufacturing companies, many of which were members of Chaebeols, Korean conglomerates. However, after the crisis, lending directed to manufacturing companies has been on a decreasing trend. In contrast, lending to households, which had accounted for less than 30 percent of the total loans before the crisis, has been surging and reached near 50 percent in 2002. <Figure 4-2>

Figure 4-2 ●● Loan Portfolio Structure of Banks




## 2.2. Credit Reporting System

### 2.2.1. Background

The credit reporting system in Korea has evolved against the backdrop of dramatic developments in the overall financial system, which includes two financial crises (the economic crisis of 1997 and the credit card crisis of 2003) and the steeply rising trend in consumer debt. The growth path of consumer loans can be divided into three phases. The first phase corresponds to the crisis period from 1997 to the first half of 1999. During this phase, consumer loans as with other credit supply from financial institutions remained stagnant, though signs of recovery in consumer lending began showing up as the Korean economy entered 1999. In the second phase that refers to the period from the second half of 1999 to 2002, consumer loans registered strong growth expanding at a rate of 25 percent every year. Specifically, credit card-related loans together with mortgage loans were the engine of the growth. As a result of fast growth, the total amount of consumer loans exceeded 440 trillion won at the end of 2002, almost double the 214 trillion Won at the end of 1999.

The third and last phase is the current period since 2003. The fast expansion in consumer loans provided by credit card firms turned out to be without careful risk management. As a result, non-performing assets of the credit card industry gradually increased to the point of threatening solvency of some credit card firms. The problem culminated in 2003 when LG card, one of the largest credit card firms, de facto went under. Restructuring of problem card firms followed, and lasted until around 2005. As of today, credit card firms including LG card have recovered financial soundness. Also, provision of consumer credit by financial institutions is back on a normal growth path.

### 2.2.2. Public Credit Registry

A credit reporting system came into existence in Korea in 1955 when the Bank Supervisory Office introduced a compulsory reporting system. The Bank Supervisory Office collected delinquent credit information, which banks were obligated to provide, and shared the negative information with participating banks. Although the system was de facto a public credit registry system, no formal legislation existed to support the system. Instead, an MOU among banks and the supervisory office, named “MOU on Delinquent Loans”, specified operation provisos of the system. Mainly due to operation convenience, the public registry function was transferred to the Bank Association.

It was only in 1995 when a formal legal framework under the name of “Use and Protection of Credit Information Act (UPCIA)” was introduced in Korea regarding the credit reporting system. The Bank Association, which was already performing the function of public registry, was designated as the public credit registry by the UPCIA. Essentially, all the financial institutions engaging in consumer finance are enacted to provide information listed by the law to the public registry. Information listed by the law includes mostly negative information such as loan delinquency, default and fraud. Positive information is limited to outstanding loan balances and credit card holdings.

### 2.2.3. Private Credit Registry/Credit Bureau

The “Use and Protection of Credit Information Act (UPCIA)” introduced the legal concept of ‘business of credit information evaluation”. The intention of legislation was to form a legal environment in which a ‘credit bureau’ could flourish as it did in Anglo-American economies. Three CBs have been established until today. Public expectations for CBs are two-fold. First, they are expected to broaden the set of credit information in circulation so that not only negative but also positive information is available for financial institutions. Secondly, it is hoped that CBs will act as a development centre of generic and benchmark credit scoring models. History in the US shows that development of credit scoring models has always been driven by credit bureaus or model development firms for CBs. As they have been established only very recently, whether Korean CBs will grow and fulfil the public expectations is yet to be seen. Nonetheless, under a fully liberalized market environment, it seems that Korean society does not have alternatives other than developing CBs to facilitate the development of the credit reporting system. <Table 4-5> provides basic information on the three CBs in Korea.

Table 4-5 ●● Credit Bureaus in Korea

| Name | NICE | KIS | KCB |
|---|---|---|---|
| Establishing Date | 2002. November | 2002. May | 2006. January |
| Business Areas | Credit Investigation, Inquiry, Debt Collection, Credit Evaluation, etc. | Credit Investigation, Inquiry, Debt Collection, Credit Evaluation, etc. | Credit Investigation, Inquiry |
| Members | 136 (mainly small-sized institutions) | 153 (mainly small-sized institutions) | 50 (mainly large-sized institutions) |
| Data Collected | Mainly negative data (delinquency data) | Mainly negative data (delinquency data) | Positive & Negative Data |
| Services | - Credit Report<br>- CB Score<br>- Early Warning Service<br>- Credit Report | - CB Score<br>- Early Warning Service | - Credit Report<br>- CB Score<br>- Transaction alarm service |

Specifically, data collected by KCB, a representative CB in Korea, is composed of five categories:

- Demographic data: data which identifies a consumer such as name, address, registration number, occupation, etc. (Collection frenquency: twice a month)
- Opening data: data which can comprehend a consumer's credit opening and transaction of loan and credit card such as date opened, amount of commitment (Collection frenquency: every business day)
- Collateral/Guarantor data: data which is related to collateral and guarantor (Collection frenqueny: every business day)
- Delinquency data: data which is related to delinquency such as the first date of delinquency amount of past due (Collection frenqueny: every business day)
- Performance data: data which is related to credit performance such as amount repaid and used in relation to loans and credit cards (Collection frenquency: once a month)

Based on the data collected, CBs in Korea provide services to member institutions that can be categorized into six categories: credit report service, credit profile service, risk prospect service, customer management service, transaction alarm service, portfolio review service. These services are in addition to provision of CB scores. We explain each of the six services in detail. Credit report service refers to providing information materials that can be used for members' decisions on customers' creditworthiness. Typically, in Korea four kinds of reports are produced by CBs. A basic report consists of basic and essential information on potential customers. A detailed report contains detailed information about an account by data category collected by CBs. A PCR-data report is composed of data collected by the PCR. A comprehensive report is a customized report which is tailored to the needs of a member in accordance with members' policy.

Credit profile service (CPS) provides data items which can be used as characteristics of CSS of a member and as a rule for decision-making. Among thousands of variables collected by CBs, members can select those according to their needs and policy rules. Risk prospect service provides characteristics and additional information for enhancing performance of members' credit scoring models. It provides base values in addition to credit profile service. Transaction alarm service refers to early warning service, which notifies members of events on each customer that may signal worsening of credit risk.

Customer management service provides up-to-date contact information such as address, phone number, and e-mail address of customers who are delinquent for more than 45 days to help members collect debt. Portfolio review service provides the credit profile service in a batch mode that can be used in behavioral scoring models for existing customers and analysis of product portfolios.

## 2.3. Practice of Credit Risk Management in Financial Institutions

### 2.3.1. Adoption of Credit Scoring Models by Large Financial Institutions

Over the past ten years consumer credit risk measurement models used by large financial institutions in Korea have moved from traditional discretion-based ones to scoring models. It was right before the economic crisis of 1997 that financial institutions began adopting scoring models. The adoption process was accelerated by the crisis of 1997, and around 2000 most banks and large credit card firms abandoned the discretion-based model, moving to scoring models. <Table 4-6> and <Table 4-7> summarise the adoption of scoring models by Korean financial institutions. In practice, two types of scoring models are known to exist: the application scoring model and the behavioural scoring model. The former is to evaluate credit risk of new customers while the latter is for existing customers.

There are three reasons why the crisis of 1997 turned out to be a turning point in the adoption of credit scoring models by large financial institutions. First, it has to do with overall liberalization of financial markets and its effect on competition among financial institutions. As a measure to deal with the severe economic crisis that was triggered by a foreign exchange crisis, the Korean government adopted full liberalization and opening measures for financial markets and institutions. In particular, interest rate regulations were abolished and other competition-enhancing deregulations were implemented. Further, foreign investors were allowed to take ownership interests in Korean banks as well as other types of financial institutions. Increased competition as a result of deregulation called for strengthening of risk management. Also, new management, often including foreign managers, emphasized more objective and transparent risk management practices.

Second, a notable change in the pattern of financial flows in the Korean economy was another important factor that affected the speed of adoption of scoring models. Before the economic crisis of 1997, large manufacturing firms demanded that a large chunk of financial flows be intermediated by financial institutions. Consumer finance, despite the upward trend, remained a secondary factor for bank management. However, after the crisis of 1997, critical changes took place in both firms and banks. Firms focused on financial restructuring and kept reducing leverage. Also, as a way to mitigate credit risk, banks preferred to diversify their assets to include more consumer loans. At the same time, management in financial institutions naturally began paying more attention to consumer finance not only as a new profit source but also as a new risk source.

Table 4-6 ●● Adoption Dates of Credit Scoring Models by Credit Card Firms in Korea

| | Application Scoring Model | Behavioral Scoring Model |
|---|---|---|
| Samsung Card | - 2001(Initial Model; Fair Issac)<br>- 2003(Update ; Internal team) | - 1996(Initial Model;Fair Issac),<br>- 2003(Update;Internal Team) |
| LG Card | - 1996 (Initial Model; Internal team),<br>- 2005 (Update; Internal team) | - 1996 (Initial Model; Internal team),<br>- 2005(Update; Internal team) |
| Shinhan Card | - 1998(Initial Model; Experian),<br>- 2003 (Current Model; Internal team) | - 2001(Initial Model; Experian)<br>- 2004(Update; Internal team) |
| Hyundai Card | - 2002(Initial Model; Fair Issac),<br>- 2004(Update;Intenal team & NICE) | - 2002 (Initial; Fair Issac),<br>- 2003(Update;Intenal team & Fair Issac) |
| Lotte Card | - Rely on CB score, No internal model | - 2001(Initial Model;NICE),<br>- 2005(Update; Fair Issac) |
| BC Card | - 2001(Initial Model; Internal team),<br>- 2004 (Update; Internal team) | - 2002(Initial Model; KIS),<br>- 2005(Update; Internal team) |

Note: Developer of the model is given in the parenthesis.

Table 4-7 ●● Adoption Dates of Credit Scoring Models by Commercial Banks in Korea

| | Application Scoring Model (No Collateral) | Application Scoring Model (Mortage) | Behavioral Scoring Model (No Collateral) | Behavioral Scoring Model (Mortage) |
|---|---|---|---|---|
| Kookmin Bank | - 1999(Initial)<br>- 2004(Update) | - 2005 | - 2005 | - 2005 |
| Woori Bank | - 2000(Initial)<br>- 2004(Update) | - 2002 | - 2001(Initial)<br>- 2004(Update) | - 2004 |
| Shinhan Bank | - 1998(Initial),<br>- 2002(Update) | - 2002 | - 2003 | - 2004 |
| Hana Bank | - 1996(Initial)<br>- 2003(Update) | - 2003 | - 2003(Inital)<br>- 2004(Update) | - 2004 |
| Citi Bank | - 2006 | - 2006 | - 2006 | - 2006 |
| SC First Bank | - 2001(Initial)<br>- 2004(Initial) | - 2002 | - 2003 | - 2003 |

Third, post-crisis financial policy played a considerable role. After the crisis of 1997, prudential regulation and supervision in Korea underwent revolutionary reform. A consolidated supervisory authority (Financial Supervisory Services: FSS) was established. And the first reforming policy put forward by the FSS was to improve risk management practices in financial institutions. Benchmark practices were identified and encouraged to be studied and introduced by Korean financial institutions. The scoring model was one of those benchmark practices.

### 2.3.2. Small and Medium Sized Financial Institutions

The spread of scoring model development is confined to large financial institutions. Small and medium-sized financial institutions have not adopted credit scoring models and most of them do not plan to. However, it does not mean that they are content with the past practice of discretion-based credit risk measurement. On the contrary, as competition becomes severe and they face more visible bankruptcy risks, small and medium sized-financial institutions are most keen to improve their risk management capacity. But, due to data limitation and resource constraint, these financial institutions seem to opt to rely on CB generic scores rather than developing their own models. Although large financial institutions also make use of CB scores, they constitute only part of the information large institutions utilize.

### 2.3.3. Current Tasks to Improve Credit Scoring Models

Risk management practices in Korean financial institutions have now improved significantly. Most notably, traditional discretion-based models are now rapidly replacing by scoring models. Given the state, practitioners now observe that most critical obstacle to be resolved is the data availability problem. Negative information produced by financial institutions is relatively abundant as they have been collected by the public registry for the past four decades. However, positive information is still scarce.

The second problem is that further development of CB models is necessary. Large financial institutions are capable of developing their own scoring models. But, smaller financial

Table 4-8 ●● Characteristics of Financial Customers in Each Credit Rates

| | Characteristics | Number of Credit cards | Number of Loan Transactions | Number of Recent Credit Application | Delinquency Record |
|---|---|---|---|---|---|
| 1~2 Rated (Prime) | Regular customers of banks; Holds various and good credit transactions records | 4~6 credit cards; 2 department cards | 0~2 (Mainly with banks) | 1 (with banks) | No |
| 3~4 Rated (Good) | Have good prospect of becoming prime customers | 1~2 credit cards; 1~3 department cards | 0~2 (with Banks/Insurance/Finance) | 1~2 (with Finance) | No |
| 5~6 Rated (Regular) | Regular customers of insurance, Finance companies; may have short delinquency records | 6~8credit cards; 1 department card | 1~3(Banks/Insurance/Finance) | 1~6 (with Finance) | Yes |
| 7~8 Rated (Sub-Prime) | Regular customers of finance Companies, savings banks; may have short delinquency records | 1~6credit cards; no department cards | 2~4(Finance/Insurance/Savings Bank) | 1~6 with Finance companies, 1~4 with Savings banks | Yes |
| 9~10 Rated (Risky) | Currently in delinquency state | 8~10 credit cards; no department cards | Over 4(with Savings Banks/Credit Card Firms) | Over 2 with savings banks; over 1 with Lending companies | Yes (long delinquency record) |

institutions cannot but rely on advice and scores from CBs. As CBs have only recently made their presence known, their roles are not yet well established in the Korean economy.

To see impacts of these problems on effectiveness of current credit scoring models, we implement simple analysis. Based on data from a Korean CB for the past three years, we compute transition rates of credit rates. We expect that to be sensible, downgrading possibilities should be lower for good credit rated individuals. For example, a first-rated individual should display lower probability of downgrading next quarter compared to a third-rated individual. We check whether this conjecture can be confirmed by real data. Downgrading rates are summarized in <Table 4-9> and <Table 4-10>. Surprisingly, we find that good credit rating does not guarantee stability of rate. In fact, good rated individuals tend to show higher probabilities of downgrading next quarter. We suspect that this is due to lack of relevant positive information in computing credit scores.

Table 4-9 ●● Quarterly Downgrading Rate: One Rate Change

| | 1st Rate | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 2003 3/4 | 19.73% | 18.88% | 12.93% | 14.40% | 15.30% | 13.95% | 11.67% | 8.64% | 6.88% |
| 2003 4/4 | 21.27% | 20.27% | 13.47% | 15.31% | 16.77% | 16.89% | 14.77% | 10.24% | 8.96% |
| 2004 1/4 | 22.16% | 19.87% | 15.93% | 14.78% | 16.03% | 14.43% | 13.37% | 8.15% | 7.13% |
| 2004 2/4 | 19.80% | 22.51% | 16.47% | 17.54% | 21.63% | 23.77% | 21.74% | 15.98% | 14.85% |
| 2004 3/4 | 16.05% | 18.59% | 10.76% | 10.24% | 12.30% | 13.25% | 12.06% | 9.06% | 10.29% |
| 2004 4/4 | 16.48% | 17.73% | 11.27% | 9.98% | 11.04% | 11.89% | 10.45% | 7.64% | 8.48% |
| 2005 1/4 | 12.32% | 12.84% | 9.59% | 9.81% | 9.65% | 9.93% | 8.60% | 6.66% | 7.36% |
| 2005 2/4 | 18.42% | 18.72% | 12.38% | 11.47% | 14.01% | 16.25% | 19.50% | 14.41% | 11.55% |
| 2005 3/4 | 13.01% | 15.19% | 10.53% | 11.81% | 11.79% | 12.32% | 11.22% | 9.63% | 9.41% |
| 2005 4/4 | 15.10% | 16.53% | 10.50% | 11.97% | 11.83% | 12.20% | 10.01% | 7.53% | 6.96% |
| Average | 17.43% | 18.11% | 12.38% | 12.73% | 14.03% | 14.49% | 13.34% | 9.79% | 9.19% |

Table 4-10 ●● Quarterly Downgrading Rate: More than Two-Rate Change

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 2003 3/4 | 3.72% | 4.88% | 3.26% | 2.63% | 2.44% | 2.72% | 2.88% | 0.59% |
| 2003 4/4 | 4.21% | 4.90% | 3.63% | 3.06% | 3.27% | 3.95% | 4.22% | 0.99% |
| 2004 1/4 | 3.06% | 3.51% | 1.96% | 1.31% | 1.79% | 2.66% | 2.73% | 0.81% |
| 2004 2/4 | 4.61% | 6.46% | 5.56% | 4.86% | 5.48% | 7.47% | 6.60% | 1.90% |
| 2004 3/4 | 3.35% | 4.95% | 2.25% | 1.61% | 2.17% | 3.28% | 3.30% | 1.24% |
| 2004 4/4 | 2.72% | 4.54% | 1.84% | 1.37% | 2.24% | 3.58% | 3.26% | 1.17% |
| 2005 1/4 | 1.46% | 2.45% | 1.34% | 1.10% | 1.70% | 2.80% | 2.60% | 1.03% |
| 2005 2/4 | 3.37% | 5.09% | 2.52% | 1.91% | 3.78% | 6.39% | 4.76% | 1.78% |
| 2005 3/4 | 2.04% | 3.20% | 1.64% | 1.46% | 1.96% | 3.66% | 3.05% | 1.69% |
| 2005 4/4 | 2.61% | 5.06% | 1.63% | 1.53% | 2.26% | 3.52% | 3.06% | 1.23% |
| Average | 3.11% | 4.50% | 2.56% | 2.08% | 2.71% | 4.00% | 3.65% | 1.24% |

# 3. Algerian Context

## 3.1. Background

### 3.1.1. Overview of the Algerian Banking System

The financial and banking reform began in Algeria at the beginning of the 90s with the promulgation of law 90-10 on April 14, 1990, relating to the currency and credit (replaced in 2003 by Ordinance 03-11). This law established the autonomy of the Central Bank in relation to monetary policy. The Council of currency and credit, a body recently created and chaired by the governor, is the authority in charge of the monetary policy. It is also in charge of fixing the conditions of approval and creation of the banks and the financial establishments in Algeria.

The law of 1990 also established the Banking Commission, which is the body of supervision. It is chaired by the governor and has in particular the roles:

- of controlling the respect by the banks and the financial establishments of the legislative and lawful measures which are applicable for them
- of sanctioning the failures which are noted

The promulgation of law 90/10 on April 14, 1990, relating to currency and credit allowed the liberalization of the Algerian banking system. However, the system remained completely under state ownership until 1997. From 1997, privately owned-banks were allowed to enter the industry both for Algerian and foreign capital. Currently, the banking structure is composed of twenty five (25) banking and financial institutions which are distributed as follows:

- six public banks
- one subsidiary of a mutual company of insurance
- eleven private banks, including one with mixed capital
- three financial establishments, one of which specializes in consumer credit
- three leasing companies
- one bank of development whose reorganization is currently at hand

The Algerian banking network counts approximately 1,200 agencies. The public banks have very dense networks of agencies while those of the private banks are in the development phase. The banking environment employs a total of more than 30,000 agents. In Algeria, there are two categories of institutions: banks and financial establishments. The banks collect the resources from the public, distribute the credit, put means of payment at the disposal of the customers, and ensure their management. The financial establishments can neither receive funds from the public, nor manage the means of payment, or place them at the disposal of their customers. The leasing companies are classified as financial establishments.

### 3.1.2. Risk Management Practices of Financial Institutions

The current procedures of credit risk management in Algerian banks are general and simple and uniform across institutions, although certain banks and financial establishments have more sophisticated procedures which integrate systems of scoring as a tool of decision-making.

The degree of automation in the Algerian banking environment being still relatively low, the systems of file treatment in the majority of the banks are based on a manual or semi automated process. Indeed, the credit files are treated on a paper media or a data-processing application, and are stored locally. They are not integrated and automatically seized by a system of file direction. Various levels of the hierarchy intervene in the evaluation of the risk, according to the levels of requested credits and the granted delegations of power.

Whether it consists of a large company, SME or a private individual, the administrative procedure is almost identical. The credit files are deposited by the customers to the agencies, and according to the amount of the requested credit, they are submitted for decision to the committee of credit of the agency and/or the regional direction and/or the general direction. Any file deposited to the agency must be the object, after checking and confirming its admissibility, of a recording, and the customer must be given a receipt of deposit. The admissibility of the applications for credit is conditioned by the presentation of the set of documents constituting the file of financing.

#### *3.1.2.1. Procedures of the credit risk analysis*

The analysis of the financial situation of the customer and the evaluation of the credit risk are first carried out by branches. The file is then given to the regional headquarters, accompanied by the opinion and proposal of the branch. The regional headquarters, in its turn, gives the file, accompanied by its opinion and that of the branch, to the central headquarters. If the amount of requested credit is located within the limits of its executive power, the branch carries out the examination of the request and notifies the customer of its decision. On the contrary, it is bound to transmit the file with the corresponding opinion to the Direction of the Network for study and opinion. The latter takes care of the request and establishes a technical chart, reconsidering its opinion, and submits the file to the Committee of Credit of the Network. After the meeting of the committee of credit, the Management of the Network transmits the statement of the Committee, carrying its reasoned opinion and accompanied by the file, to the central direction in charge of the financing.

The latter examines the request and subjects it to the appreciation of the Head Office of the Committee of Credit or the Central Committee of Credit. After examination of the file by the head office or central committee of credit, and on the basis of the decision consigned on the statement of the meeting, the central direction in charge of the financing must proceed:

- With the notification to the customer of the decision of credit granting and its related conditions, as well as the drafting of a letter of credit authorization and its delivery to the direction of the concerned network
- The establishment and the signature of the financing convention after the relief of possible discretions

Once the decision of credit is made, the follow-up is done by the agency on the basis of a bill book of payment (managed by the information system software package Delta version 7 in certain credit institutions). It should be added that there is a structure within each bank which ensures the study and the follow-up of all engagements and manages all the statistics relating to the operations of credit.

In order to guard themselves against the risks of credit or failure, primarily linked to the suspension of payment of the company and its insolvency, the banks and financial establishments rely on various sources of information (the information coming from the company which requests the credit, the information available at the banker and the professional information). The information coming from the company is essential in the assembly of the file. They are contained in the legal, accounting, and financial documents (status, assessments, charts of the income statements, financing plan, management reports, auditors' certificate, etc...). In addition, there is also the information collected at the time of the meeting between the person in charge of the credit and the customer, the information collected from various external sources (a follow-up of the business conditions and the economic situation, media, Internet sites, publicity...), the analysis of the banking operations if the applicant for credit is already a customer.

Lastly, the consultation of the files of the Central Bank, such as the risk center for companies, which provides information on ongoing credit, and the center for unpaid debts, which provides information about unpaid checks and the restrictions of check books, etc. The assessment center, whose role is to provide to the bankers the cost estimates of the companies and the lenders, exists, but is not yet operational. The whole of this information will constitute the file which will be used as support for the analysis of the credit risk, and which will allow the organizations of credit, generally represented by a committee, to decide on the advisability of granting the credit or not. The decision of financing, which is taken by the majority, lies on the retrospective analysis of the accounting and financial documents through a few significant ratios, in order to determine the solvency and minimum financial balance. This decision is also part of the policy of risk and profitability, as well as of the strategic will of each bank.

Concerning credit intended for private individual customers such as mortgage loans, vehicle loans and other consumer credit (financing of household goods, electric household appliances, electronics, etc.), the approach of the banker is relatively different. The evaluation of the risk is primarily based on documents of the personal identification of the customer, on documents proving his/her incomes, as well as on justifying documents related to the nature of the good being financed. The banker initially examines the right of the applicant to the loan. He then proceeds to the evaluation of his capacity for payment on the basis of his monthly income and his age, thus evaluating the level of credit which could be granted to him.

The delivery of a mortgage or a pledge, and the subscription for a life insurance are mandatory for the release of the funds by the banker, and constitute the only guarantee to which the organization of credit can resort to in the event of failure by the customer. For this type of customer, the sources of information are rather limited. The creation of a credit information center for individuals in Algeria is an element which will serve the interest of the banks with better information and more effective risk management.

### *3.1.2.2. Example of the risk analysis procedure for consumer credit*

For a financial institution specializing in consumer credit, the procedure is as follows. This establishment uses retail outlets or businesses, connected online with its main office, where the customer goes to buy and where he/she declares a certain amount of information, which will be recorded in the Internet application, made available for the salesman by the organization of credit, or on a paper form called "project item" that the salesman will fax to the main office of the organization of credit. A refusal or an agreement on condition following the analysis of this information is communicated by the head office to the salesman within 15 minutes following the reception of the application for credit. The customer then deposits his file, made up of the documents in proof of his declarations (pay slips, document in proof of residence...) to the salesman who transmits it to the head office. Once the file has arrived, it will go through the following stages:

The assembly pole: The commercial attaché checks if all the documents necessary are provided and transmits the complete files to the granting pole at the end of the day.

The granting pole: When the granting commercial attaché receives the file, it checks if the customer is not indexed (restriction of check book or garnishment in progress) and if the file does not contain fake documents or declarations. If the file is clean, he gives his agreement in condition of the obtainment of the operational justifications or OPJ: the invoice, the yellow chart with the mention "guaranteed to the profit of the organization" and a copy of the contract of insurance (in the case of vehicle finance). Then, the commercial attaché transmits the information to the salesman who must call the customer for the payment of the personal capital contribution, the handing-over of the contract of insurance and the retrieval of the vehicle.

Then, the salesman faxes the operational justifications to the head office and the commercial attaché finally finances and classifies the file. In this financial institution, the time for the file overview and the granting of a loan to a private individual is of 24-48 hours.

## 3.2. Credit Reporting System in Algeria

The theoretical lessons show that the division of the information between lenders makes it possible to reduce the risks in the market of credit. Indeed, the exchange of information leads to a better knowledge of the characteristics of the borrowers and thus to a better forecast of their initial risks. The objective of these exchanges of information is to make it possible for the participants to evaluate and limit the risks that they are taking in their credit activities. Similarly, a growing number of analyses based on the empirical data available shows that there is a direct bond between the information systems of credit and the improvement of the credit markets. These information systems, called risk Centers or Offices of credit, are instruments which on one hand make it possible for the banks to improve the risk management of the credit granted to companies and private individuals, and on the other, for the borrowers to prevent over-indebtedness. In addition, the installation of a credit information system constitutes an instrument supervising the banks and financial establishments for the bodies of regulation. The rise of the credit information centers throughout the world shows the advantages for the financial institutions of having information on the solvency of the borrowers, which makes it possible to reduce failures.

The Bank of Algeria manages and organizes three centers (risks, unpaid debts and balances) regarding its general direction of credit and banking regulation (GDCBR). These centers constitute databases as well as information centers, essential to a good and careful control of the credit policies by the banks and financial establishments. They allow, moreover, a healthy management of the instruments of payment and credit, and a particular knowledge of the payment incidents which are capable of paralyzing banks and financial establishments.

The three centers are information and analysis centers, supplied by all of the banks and financial establishments in Algeria, and can be consulted freely by these institutions. These centers also diffuse news bulletins for the members of the structure. Moreover, they constitute an accounting and financial database on the companies and the households, on their debt and their incidents of payment.

### 3.2.1. Overview of the Current System: The Risk Center in the Bank of Algeria

The concept of risk was rehabilitated with the legislation on currency and credit. Indeed, the liberalization of the banking structure removed single domiciliation and the specialization of public banks. Moreover, it allowed the arrival in this sector of new private banking and financial institutions, whose development of activities contributed to the emergence of a competing environment between the banks, as much on the level of the resources market as on the level of the credit market and that of the banking services. Thus, a credit information center became a necessity.

For this reason, in 1992, the Bank of Algeria decided to create within its structures a "Risk Center" whose purpose is the collection, the centralization, and the diffusion of banking risks and the operations of leasing utilizing an Organization of Credit. This center became operational in 1994. Since this date, the Risk Center of the Bank of Algeria evolved by the declarations of credit carried out by the banks and financial establishments, and mainly developed thanks to the contribution of informatics and the rise of the banking network. It is thus a public credit exchange system.

It is necessary to specify that the declarations to the center by the banks and financial establishments of the granted credit only concern their customers, as corporate debtors and individuals who carry on a non-paid activity. Consumer credit is not integrated in this center. It is appropriate, in this respect, to specify that a project of credit reporting center for private individuals has just been launched by the Central Bank.

The Law 90-10 of April 14, 1990, relating to currency and credit constitutes the legal basis for the creation of the risk center for companies. This center was set up and was organized within the Bank of Algeria in accordance with the provisions of law 90/10, reinforced by article 98 of the Ordinance 03/11 of August 26, 2003, relating to currency and credit. These texts established the mission and the principal characteristics of this center.

This information center has the role of collecting from each bank and financial institution the names of the payees of credit, the nature and the limit of the granted credit, the frequency of use as well as the guarantees taken for each credit. It is also charged with counting doubtful and litigious debts. The data thus collected is intended to be diffused to the lenders for better management of their credit risk.

The risk center for companies represents an important tool for the evaluation credit risk for lending organizations, as much at the moment of granting the credit as in the permanent follow-up of the latter. Indeed, it provides the members with information which concerns their own customers or other customers when they ask for a credit.

For those who grant it, credit implies a risk of non-repayment and/or a risk of non-payment of the interest by the customer. The evaluation of this risk depends, among other things, on the level of debt already reached by the borrower, in other words the total credit which he already obtained from various other financial institutions.

The requests for risk consultation by the banks and financial establishments make it possible to know the total debt of a customer and the possible level of unpaid debts, and to facilitate the decision-making of financing.

Within the framework of the supervision, the risk center constitutes for the Banking Commission an important instrument for the monitoring of the financial soundness of the banks and financial establishments which it controls. Indeed, the information recorded at the center is used by the controlling authority, within the framework of its surveillance mission of the prudential plan of the credit institutions, intended for better comprehending the banking risks and mainly the risks of credit.

The risk center works out statistics on the credit granted to the customers for the whole of the banking structure. These statistics can be exploited for the need for refinancing. Moreover, the center provides important information on the credit allocated by categories of recipients, geographical sector and branch of industry. This information is often used in branch studies and/or by topics.

The organization and the operation of the risk center are governed by regulation 92-01, on the organization and operation of the Risk Center enacted on March 22, 1992, by the Council of currency and credit.

The instruction of application 70-92, which decides the methods of declarations of bank credit and the operations for leasing, was installed on November 24, 1992. The banks and financial establishments operating in Algeria are periodically held to declare, starting from a threshold, the credit opened and used for the operations carried out by their counters. After having established the lawful base, the Bank of Algeria developed an internal data-processing application and installed the equipment necessary to deal with the various operations which make it possible for this center to be operational. Thus, a system of information exchange between the members and the Bank of Algeria was set up in order to fill the center database.

This center functions in the form of databases allowing the collection, the recording, the treatment and the storage of information communicated by the banks and financial establishments. The risk center constitutes a source of information and a unique service of intelligence for the banks and financial establishments. The exhaustiveness, reliability, integrity and availability of the communicated information are essential conditions for the center to help the banks and financial establishments with better assessing their credit risks.

All of the banks and financial establishments operating in Algeria must adhere to the risk center, except for a financial institution specializing in consumer credit. The companies not regulated by the Bank of Algeria, such as insurance companies, are not allowed in this center. A multi-sector participation is set aside in our model of centers.

These members who finance the commercial activities must provide for the risk center information concerning the beneficiaries of credit, the nature and the limit of the granted credit, the amount of the uses as well as the guarantees taken for each credit.

### 3.2.2. Information being collected

The risk center collects the whole of the information on the banking risks and the operations of leasing utilizing an Organization of Credit. It also collects the information on the beneficiaries of credit and the banking agencies which granted these credits. The collected information on the credits is related to the opened and used amounts as well as the various types of credit. In 2006, this positive information was supplemented by a “negative branch”, which records the non-payments of the granted credit.

The data transmission process is not automated. The routing of the data starts with the lenders who send by magnetic media the descriptive files containing the data declared to the center. These data are seized, controlled and treated by a production database server. The data intended to be consulted by the lenders are then saved in another database server, dedicated to the consultation and connected to the members through a specialized X25 line. Specific contents of information collected by the risk center are as follows:

### A. Information concerning the identity of the credit beneficiaries

1. For individuals who carry on non-paid activity:
- name
- date and place of birth
- complete address
- branch of industry

2. For corporate debtors:
- corporate name and initials mentioned in the articles of association
- date and place of creation; complete address
- branch of industry
- legal form (SNC, SARL, SPA, etc⋯) and the legal sector (private or public)
- register of trade and principal financial indicators of the beneficiary

3. Information on the declaring banks: the database also records information on the declaring banks:
- the name of the declaring establishment
- the paying agent agency and its code

The descriptive data mentioned above are constantly addressed to the risk center, independently from the period of centralization.

### B. Information on the credits

1. Threshold of declaration

The threshold of declaration is currently fixed at an amount of 2 million dinars. It can be revised constantly by the Bank of Algeria. Also, as soon as the sum of the credit granted to the same customer reaches this threshold, the participant is held to communicate to the center the information relative to all the credit granted him.

2. Credit categories

The declared credits are distributed according to their duration and nature:

- Short term credit (ordinary debtor credit, export credit, other credits…)
- Medium term credit
- Long term credit
- Leasing
- Commitment by signature (downstream, bond)

Moreover, the information communicated by each bank and financial institution on the credit must be allocated according to:

- the sector or the branch of activity of the beneficiaries
- the geographical area
- the legal form

### 3.2.3. Centralization of Information Process

An instruction from the Bank of Algeria defines the methods of declarations by the banks and financial establishments of the credit granted to their customers of corporate debtors and individuals who practice a profession. The process of information reporting to the risk center takes place as follows: The credit granted to the customers is recorded by the agencies of each bank and financial institution, following the groundwork required by the risk center. The data is then transmitted to the registered office of each member. The latter makes a centralized handing-over of the data to the Bank of Algeria. The timeframe for the declarations of the opened and used credit is two months. These statements are made on magnetic media (diskette). For each recipient of credit, the bank must draw up a declaration which gathers the whole of the opened and used credit.

After the verification of the data communicated by the members, the Bank of Algeria carries out the centralization of the declarations (their loading in the database). The treatment of the declarations is done by a data-processing application.

After this centralization, the Bank of Algeria informs the declaring banks and financial establishments of the credit contracted by their customers from all the banking and financial structure. This information is communicated on the same media (diskette) and is allocated by:

- category of credit
- sector or business segment of beneficiaries
- geographical area
- legal form of the borrower

The obtained information, at the end of each centralization (bimonthly), brings clarification of the portfolios of each bank and financial institution. They are also intended for the controlling authority within the framework of prudential monitoring. A third level of service carried out by the risk center is basically related to consultation.

### 3.2.4. Utilization of Centralized Information by Member Institutions?

The periodic centralization of the declared credit constitutes a database which the members of the risk center can consult. The banks and financial establishments have the obligation to inform the center of any new contract of credit subscribed by a private individual, thus filling its database. In exchange and on request, the Bank of Algeria communicates to each bank and financial institution member, the collected data concerning the customers of the lender or any other customer with the authorization of the latter.

Before granting credit, and if the requested amount exceeds the threshold of 2 million dinars, the lenders must consult the center, which will provide them with information on the possible existence of other credit obtained by the borrower through other banks, as well as possible non-payments.

These consultations are made by a line specialized for a great number of banks. However, at the present time, the consultation is possible only by the intermediary of the corporation of the member. There is no direct access to the risk center for the agencies of the banks and financial establishments. Since 2004, an “online” system of consultation was set up. Currently, a dozen banks use this connection (X25) to collect the information relating to the risks concerning their customers.

### 3.2.5. Data protection

The consultation of the risk center concerning a new customer who requests credit can only be done with his written consent. The consultation is free for all the members regarding their own customers for a better management of their portfolios. In addition, the data communicated by the risk center is strictly confidential and is intended for the exclusive use of lenders, and only within the framework of their risk management.

### 3.2.6. Recent Developments

In 2006, the risk center was supplemented by a “negative branch” which counts the non-payments of the granted credit. Indeed, a new database was created in order to record the declarations relating to the unpaid credit. The procedure of declaration is the same as for the centralization of the credit. An instruction by the Bank of Algeria (07-05 of August 11, 2005) made it obligatory for the banks and financial establishments to declare doubtful and litigious debts and classified debts as defined by the prudential regulation, to the risk center.

This new tool aims at supplementing the set up device with information of a qualitative matter, provided by the members, which is likely to improve the appreciation, management and control of credit risks.

At the end of December 2006, the Bank of Algeria had a permanent file of 40.398 companies declared by their banks, compared to 32.557 companies in 2005. The total amount of granted credit, including the commitments by signature, was 1.575 billion dinars in 2006, compared to 1.427 billion dinars in 2005 (see exhibit 1).

At the end of February 2007, the risk center showed the following characteristics:

- Members: 22 including 18 banks and 4 financial establishments
- Total agencies: 1,198
- Permanent file: 41.485 clients
- Total credit: 1.649 billion dinars authorized and 1.542 billion dinars in use.

The short-term evolution is to envisage a mission of audit of the members to improve the level of declarations. In addition, it is advisable to generalize the data exchanges via the specialized X25 network, or to found a WEB network in the near future. In the medium term, the Bank of Algeria has registered the modernization of the existing information centers, by their integration in the project of the new global information center (credit information center), which will be carried out with the technical assistance of the World Bank (global center (CIC) = risk center for companies + risk center for households + unpaid debts center).

## 3.3. Future Plan: The Credit Center for Private Individuals

### 3.3.1. Background: Evolution of the mass credit market

Consumer credit is relatively recent in Algeria. The problem of household debt does not constitute a concern at the present time. However, the authorities took the initiative to prevent any unfavorable evolution. For this reason, a working group has been installed at the ministerial level in order to put forward measures aiming at legal supervision of consumer credit, whose principal objective is the protection of households. For this reason, the Bank of Algeria, which takes part in this work, made the decision to create a credit center for private individuals.

Credit to private individuals has witnessed an important increase and hoisted its annual growth to 25% in 2001, 123% in 2002, and stabilized to 24% in 2005-2006 (see <Table 4-9>). This growth of loan applications by private individuals was stimulated by the installation of new banks, as well as by the launching of new credit formulas. Since 2000, the structure of private individual credit did not undergo any transformation, since the share devoted to mortgages remains by far the most important (56%). The purchase of lodging thus constitutes the first reason for the need for credit, followed by vehicles (27%), then by the other consumer credit (17%).

Indeed, the ongoing progression essentially resulted from the widening of the diffusion of mortgages. In addition, the start of the automobile market in 2000 and the purchases of new vehicles mobilize the largest fraction of the affected finance. The amount related passed from 31 million dinars in 2,000 to 44,840 million dinars in 2006. A clear rise in other consumer credit was also recorded during the years 2001, 2002 and 2003. This is explained by the gusto of households for household appliances.

The private individual credit rates generally stabilized to 24% in 2005-2006. Flows of new loans assigned to the financing of real estate increased by 21%, and as for those intended for the purchase of vehicles and other consumer goods, they increased respectively by 28% and 29% in 2006.

This tendency will probably continue during the following years and is justified by the price escalation of housing and land, and the growing proportion of homeowners. Moreover, real estate loans are not subject to tax measures, unlike the other types of consumer credit. Lastly, the growing appeal (24% in 2006) to private individuals of all forms of credit causes an intensification of the competition in this retail industry segment, as well as an increase in the risks of non-payment, which justifies the installation of a supervising device; in fact the credit center for private individuals. Since it concerns a project whose global organization is not yet definite, our intention is to expose hereafter the objectives and the principal characteristics of the risk center for private individuals.

The statistical data show that the use of consumer credit and mortgages in Algeria is swiftly expanding. Consequently, the introduction of the concept of data exchange on consumers and the establishment of an infrastructure for credit information seems like a necessity in order to prevent the over-leverage of private individuals and attenuate the risks of insolvency for the lenders.

### 3.3.2. Objectives of the credit center for individuals

The credit center for individuals has the role of recording all the credit granted to individuals for private purposes, as well as the possible non-payment relative to such credit. The center transmits information to the members which concerns their own customers as well as other people asking for credit as long as these people authorize them to do so.

The recording of the data on the ongoing credit, and the incidents of payment and their diffusion, make it possible to know more accurately the credit applicants, which allows the credit center for private individuals to meet the two principal aims which are assigned to it:

- the protection of the consumers by the prevention of over-leverage: the lenders are obliged to consult the center before the granting of new credit
- the availability to the banks and financial establishments of information on the consumer credits, for a better evaluation of the risks related to the operations of credit

The medium-term realization of such a project became a necessity, especially with the development of consumer credit and mortgages. On one hand, this center constitutes an instrument of opposition against the over-leverage of households, which rely more and more on credit, and on the other hand, a tool helping to decide the granting of credit for the banks and the financial establishments, which will have an additional, reliable and genuine source of information. This global credit information center for private individuals from the Central Bank will be composed of a positive branch and a negative one.

Negative information center: it is called negative because it only deals with the bad debtors of consumer credit and mortgages. It will count the incidents of payment and will register any person who has had a non-payment.

Positive information center: it will include two categories of information: data of a personal nature (name, first name, address....) and data on the loans (number and types of credit subscribed by the borrower, amounts, expiries...).

### 3.3.3. Legal and regulatory basis of the center

The fast development of credit to individuals these last years led authorities to think about the measures to be taken in order to protect the consumer, particularly with the installation of a legal framework for consumer credit.

The creation of this center within the Bank of Algeria is a prerogative which it was conferred to by the law. Indeed, article 98 of the ordinance 03/11 of August 26, 2003 specifies that: *The Bank of Algeria organizes and manages a service of centralization of the risks, called "risk center", charged with collecting from each bank and each financial institution the name of credit beneficiaries, the nature and the limit of the granted credit, the amounts used, as well as the guarantees taken for each credit.*

However, working out the lawful texts of this new center is required. Once the project is carried out, a regulation from the Council of currency and credit will have to be enacted to establish the rules of the organization and operation of the credit center for private individuals. An application instruction of the Bank of Algeria will then set the methods of declarations of consumer credit and mortgages.

All the banks and financial establishments which grant credit to private individuals are held to adhere to the center. The consultation of this database will be of, in accordance with the regulation, an obligatory nature for the participants. Thus, before granting a loan to an individual, the lender will have to check beforehand the solvency of the borrower based on the information received from this center, and will be therefore fully responsible for the actions following the request of credit.

Those institutions which do not grant this category of credit can neither adhere to nor consult the data recorded in this center. Currently, in Algeria, a certain number of banks and financial establishments do not grant loans to private individuals. Similarly, there are no organizations issuing credit cards yet. The banks and financial establishments give information on the consumer credits and the mortgages granted to their customers of private individuals, and on the non-payments relative to these loans.

They also communicate the descriptive information relating to the identity of the credit beneficiaries, such as: the last name and first name, the date and place of birth, and the address. That makes it systematically possible to individualize the borrowers experiencing financial difficulties, and to give a global image of the activities of the customer, as well as of the conditions under which he/she has paid his preceding loans.

### 3.3.4. Centralization and diffusion of the data

A direct connection will be ensured between the center and the participants. Consequently, the collection and the diffusion of the information will be done online. The system will automatically proceed to a series of controls then to the centralization of the data. The result is a database, which gives the detailed and consolidated situation of the debtors to the whole of the banking structure, in terms of global debt and possible non-payments.

For the members, the information can be communicated on a monthly basis, or on their request. The consultation of the data is open to the participants and is mandatory before the granting of credit to a new customer, depending on his/her approval. In case certain banks do not have an information system, the plan is to place various support for transmission for consultation at the disposal of the participants: telecommunication by a specialized network, diskettes, CDs.

### 3.3.5. Data protection

The consultation of the risk center concerning a new customer requesting credit can only be done with his/her written consent. The consultation is free for the bank regarding its own customers for better management of their portfolios. In addition, the data communicated by the risk center is strictly confidential. The collected information is reserved for the exclusive use of the banks and financial establishments, and cannot be used for commercial or marketing purposes.

In connection with the implementation of the texts by the Bank of Algeria, it is necessary for the authorities to quickly take some legal steps relating to consumer protection. Indeed, following the example of the countries where consumer credit is very developed, and constitutes an engine of growth, it is required to enrich the existing legal devices regarding consumer protection. A certain number of issues regarding consumer credit have already been listed, which can be inserted in the code of consumption project. It mainly consists of: setting a model of credit contracts, defining the TEG (total effective rate), making the publicity on the conditions of granting consumer credit mandatory, and establishing the right of retraction of the borrower during a certain period of time.

### 3.3.6. Time tables for establishing the credit center for individuals

The creation of the credit center, regarded as a priority by the Bank of Algeria, benefits from the technical assistance of the World Bank, from which an expert carried out a series of studies in February 2007. Concerning the completion date of such a center, the World Bank expert, basing his opinions on the experiments of certain countries, has evaluated it for 18 to 24 months.

The consideration will have to be based on various technical aspects including:

- the infrastructures
- the main applications to develop (informatics)
- the networks for data exchange between the center and the participants (telecommunication)
- the members (specialized lines and/or the Internet…)
- the lawful framework
- the system security

### 3.3.7. Other Infrastructures

In order for the declared data to be reliable, a reorganization of the structures and the internal procedures of instruction and treatment of the credit files of the banks are essential because the quality and the reliability of shared information largely depend on the degree of sophistication of the information systems of the declaring establishments.

For the development of the technical solution, the Bank of Algeria will call upon the international competition, as well as for the supply of the equipment. Realization of a modern infrastructure, in compliance with international standards, will require important resources that the Bank of Algeria will deal with. It regards this realization as a mission of public interest. Indeed, the economic usefulness and the social function of these preventive files are recognized at an international level.

With the creation of the credit center for individuals, the Bank of Algeria has decided to modernize the existing centers. The strategy selected is to create a Global Credit Information Center which will gather several databases - private individuals, companies and unpaid debts. Bridges will be established between these databases in order to have a complete image of the borrowers' situations. The concern of the Bank of Algeria through this project is to set up a device which ensures better credit rationing. Indeed, the problem that the lenders are currently confronting is that they do not have sufficiently reliable data on the potential borrowers, enabling the measurement of the level of risk which they represent. In addition, this system of dividing the data will be based on the equity of the competition between the members and will be founded on the confidentiality, reciprocity and the update of the data and the respect for the law. On a technical level, our ambition is to establish a credit information system in compliance with the best international practices.

Table 4-11 ●● Evolution of the Declarations to the Risk Center

| Sections | YEARS | | | | |
|---|---|---|---|---|---|
| | 2002 | 2003 | 2004 | 2005 | 2006 |
| Number of credit declarations | 17,502 | 18,664 | 24,816 | 32,557 | 43,584 |
| Declared amounts (in millions of dinar) | | | | | |
| - Authorized | 1,026,520 | 931,590 | 1,090,766 | 1,435,438 | 1,575,937 |
| - Used | 938,098 | 1,095,137 | 1,083,033 | 1,427,830 | 1,463,129 |
| Evolution (%) compared to the previous centralization | | | | | |
| - Authorized | 15.26% | -6.00% | 7.34% | -12.10% | 13.84% |
| - Used | -22.18% | 18.12% | 9.00% | -3.13% | 12.94% |
| Number of declaring agencies / Network total | 675/1,009 | 627/989 | 716/1,022 | 753/1,068 | 907/1,195 |
| Number of beneficiaries (Permanent file) | 15,641 | 17,795 | 21,881 | 31,013 | 40,398 |
| Number of beneficiaries (Declared credits file) | 6,943 | 7,831 | 10,712 | 13,979 | 19,087 |
| Number of declaring establishments | 12 | 13 | 17 | 18 | 20 |

Table 4-12 ●● Evolution of the Ongoings of Credit Granted to Private Individuals during 2000- 2006

Unit: millions of DA

| Forms of credit | YEARS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2001 | Evol.% | 2002 | % | 2003 | % | 2004 | % | 2005 | % | 2006 | % |
| Real Estate | 21,201 | 24,190 | 14% | 49,749 | 106% | 54,852 | 10% | 63,716 | 16% | 77,801 | 22% | 94,399 | 21% |
| Vehicle | 31 | 1,502 | 4745% | 6,559 | 337% | 11,492 | 75% | 26,445 | 130% | 34,920 | 32% | 44,840 | 28% |
| Other credits | 437 | 1,292 | 196% | 3,745 | 190% | 12,901 | 244% | 18,908 | 47% | 22,771 | 20% | 29,423 | 29% |
| Total | 21,669 | 26,984 | 25% | 60,053 | 123% | 79,245 | 32% | 109,069 | 38% | 135,491 | 24% | 168,662 | 24% |

# 4. Recommendations for Algeria

## 4.1. Implementing the Current Plan for Setting-up a PCR

Past history of the credit reporting system around the world indicates that there are two paths for the development of the information sharing mechanism. One is through pure market evolution and the other is through public intervention. The former model can be found in the US and the UK where private information sharing firms (CB) evolved in response to market demands and then drove the development process of the whole credit reporting system of a national economy. In the rest of advanced economies, constituted mostly of European countries, the latter model is found. In those economies, a credit reporting system began as a tool for system risk management of the supervisory authority in the early 20th century, usually under the central bank. In contrast, the role of CB came into existence only very recently.

In those developing economies such as Korea that took the growth path in the second half of the 20th century, it is generally observed that governmental intervention has been prevalent. In particular, as evidenced by the Korean experience, key infra of the financial system has been introduced through intentional policy efforts rather than as a result of market evolution. The credit reporting system is just one of many examples.

We expect that the Algerian financial system will develop following the footsteps of the developing economies such as Korea, and so infra of the financial system should be put into the system through policy efforts.

Algeria currently is in the process of setting up a PCR for individuals under the central bank, Bank of Algeria. The PCR plans to collect positive and negative information from participating financial institutions that include all the credit providing institutions except insurance companies. Collected information is to be shared among participating institutions. We suggest that, as the first step to establishing a credit information reporting system, the plan to set-up the PCR should be implemented as planned.

Further, in implementing the plan, we emphasize that due attention should be paid to maintaining the reliability of collected information. Collection and sharing of credit information on individuals may face opposition of the public unless the reliability of information and the fairness of information usage are trusted. In fact, a prerequisite of a sustainable credit reporting system is the existence of public trust in it. The PCR should aim at gaining public trust as well as constructing credit reporting infra per se.

## 4.2. Establishing a Credit Bureau

The ultimate purpose of a credit reporting system is to provide better infra for credit risk management of financial institutions. Circulation of credit information will bring about final benefits to a financial system only when it is accompanied by well-functioning credit risk measurement models which will make use of information available through the credit reporting system. A typical problem that a developing economy faces, which is relevant also for Algeria, is that neither a credit reporting system nor a credit risk measurement model exists. Considering this, in parallel to setting up a PCR, a plan to foster capacity of the Algerian financial system to develop credit risk measurement models should be prepared and executed.

From the Korean experience as well as those of other advanced economies, development of credit risk measurement models is driven by credit bureaus. Large financial institutions often develop and maintain their own credit scoring models. However, it is observed that even these institutions rely on CBs as a third form of expertise in model development. In other words, CBs play the role of R&D centers for credit scoring models in an economy.

In addition, the Korean experiences illustrate another reason why a credit bureau is necessary for efficient risk management of financial institutions, namely provision of reference-credit scores. The Korean case shows that large financial institutions employing their own credit scoring models utilize CB-providing credit scores for reference. Other financial institutions that do not maintain their own generic credit scoring models rely more heavily on CBs in measuring credit risk of potential customers.

In this regard, we suggest that Algeria should establish a credit bureau. Considering the current governance of the Algerian financial system, the credit bureau may be established either directly by the state as a public company or by banks under the guidance of the government.

## 4.3. Improving Internal Risk Management Capacity of Financial Institutions

Together with building up the hardware, it is important to improve software aspects of risk management in the financial system. Firstly, training of human resources is critical to the development of risk management capacity. Korean experiences suggest that introduction of hardware aspects of risk management is easier. Credit scoring models in their generic forms are readily available from advanced countries such as the US. In fact, early credit scoring models in Korea are mostly adopted from US credit bureaus. It proves more challenging to adapt and operate models accounting for Korean contexts. In the end, the success of credit risk management depends on human expertise. In the long run, building up of expertise requires improvement of the general human capital accumulation process. In the short run, retraining of current human resources is essential. We suggest that Algeria should prepare and implement a plan for human resource (re)training programs.

Next, identifying and spreading best practices of risk management are equally important. In fact, in improving risk management capacity of financial institutions, financial supervisory authorities in advanced countries have recently been adopting the approach of identifying best practices and spreading them in the relevant financial industry. The effort is appropriate considering that risk management in financial institutions includes various internal decision making and practices going beyond model development and credit scoring. We suggest that Bank of Algeria, which is in charge of setting-up a PCR, should prepare and implement the plan for best practice spreading.

It is notable that internal risk management capacity of financial institutions is also important for the overall development of the credit information sharing system. Needless to say, the quality of credit information system depends on the quality of data being reported. In addition, the quality of outputs from credit scoring models depends on the quality of data put into the models as well. Thus, the quality of credit information or data ultimately decides the functional efficiency of credit risk management processes. Though the minimum level of the scope and the accuracy of information may be controlled by the PCR, it is financial institutions themselves that determines the final quality of credit information. Hence, we suggest that Bank of Algeria should encourage financial institutions to establish a policy for credit information collection.

## 4.4. Final Comments on the Roadmap

In carrying out the suggested tasks, priority should be given to the task of setting-up a PCR. We believe that a PCR will form the foundation of the credit risk management system, a prerequisite for other components of the system. Then, the other two tasks can be pursued as follow-up tasks.

- First Phase: Setting-up the PCR
- Early Second Phase:  Setting-up (re)training programs
- Late Second Phase:Establishing CBs

Although they can be implemented simultaneously, if a choice needs to be made, we recommend implementing the task of setting-up (re)training programs. It should be noted that production of human resources takes longer than physical infra. The time schedule for the three suggested tasks can be designed on its own, independent of the overall policy plan for developing the credit card business in Algeria. In fact, we believe that the three tasks in relation with credit risk management should be pursued as soon as possible. This is so because the Algerian financial sector has been expanding credit risk exposure to individuals recently through consumer loans. Therefore, enhancing credit risk management capacity of the Algerian financial sector is already a much needed policy task.

# Chapter 5

# Regulations on Credit Card Business: Algerian Perspective

# Summary

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Algeria is essentially a cash based economy. Since the transition from a planned economy to a market one in the early 1990s, Algeria has undertaken various reform measures to modernize its financial system. Despite all these efforts and growing financial transactions in the private sector, state owned banks' lending to public entities is still dominant and financial markets are in infancy.

Banking sector reforms such as privatization of state banks and modernization of the payment system are priorities. Algeria has achieved partial success in the areas of improving governance of public banks and strengthening the financial supervisory system but still suffers from a massive volume of non-performing loans in public banks. As for the modernization of the payment system, Algeria has created a new information sharing system but has not yet planted a transaction mechanism based on the system.

In order to facilitate the development of a modernized payment system and further the credit system, it is necessary to establish public software such as a relevant supervisory system as well as to nurture an environment where private businesses smoothly function. In this respect, this chapter looks into the factors that Algerian government officials should keep in mind when constructing regulatory environments for credit card business.

Specific features of the Korean credit card business are summarized as follows. First, credit card business is regulated by financial supervisors. Among the policy objectives of efficient resource allocation and privacy protection, it is understood that the former is emphasized more in Korea. Thus, credit card companies are subject to very specific and detailed financial regulations to secure their sound management. Under this regime, regulations tend to be levied on institutions rather than activities. Second, credit information is also regulated by financial authorities. This fact is consistent with the policy focus of raising efficiency through vigorous financial transactions being given first priority, whereas privacy protection seems to be a secondary concern. Third, credit card companies are closely connected with commercial banks. Most banks run credit card business and underwrite bonds issued by non-bank credit card

companies. In this sense, the credit card industry is exposed to systemic risks.

The Korean experience tells us about the significance of separation of credit card companies from systemic risks. In order to achieve this goal, credit card policies should not be influenced by macroeconomic policies like a tool of expansionary policy in a period of recession. Regardless of business cycles, a stringent risk management system should be built in and the soundness of credit card companies thoroughly monitored based on timely and accurate information, by professional supervisory staff. It is also worthwhile to note how devastated consumers are when credit card companies get distressed. Massive individual credit delinquencies do not remain as only an economic problem. Rather, it is harder to resolve the serious social problems which ensue.

Most importantly, policymakers should be reminded of the purpose of introducing and regulating credit card business. The policy objectives depend on the level of economic and financial market development. If efficient resource allocation is the purpose like in Korea, privacy protection could be a secondary concern. But even in this case, the government should seriously consider systemic risks, which are related to consumers' welfare in the end.

The policy recommendations for Algeria regarding regulations on credit card business are as follows. First of all, in order to keep the soundness of credit card businesses, the financial regulatory authorities should establish clear accounting principles related to the credit advanced by the credit card sector. As seen in Korean experiences as well as in almost all other situations across other countries, credit card loans are more likely to become delinquent. Furthermore, bad loans are less likely recovered vis-à-vis normal bank loans. For this reason, appropriate risks should be carefully assessed based on past history of pure credit-based lending and necessary adjustments.

When setting up the standards, the Bank of Algeria should be considerate and conservative regarding the accounting principles. Since the delinquency ratio of assets of CCCs is very high and volatile relative to banks' counterpart, the overall profitability of CCCs is subject to greater uncertainties. Also, Algeria, where credit card business is run by commercial banks, is advised to set up distinct firewalls between credit card accounts and ordinary bank accounts in order to check systemic risks stemming from the credit card sector.

The volatile performance of the credit card business partly stems from fierce competition of credit card business participants to expand the market share. As a network industry, credit card business enjoys the size and scope of economy. As more merchants and card holders become affiliated with credit card companies, it will be more likely to become a price setter. For this reason, the competition for markets is inevitable in this business.

In order to cope with these market failures, strengthening consumer protection measures is needed. For example, reasonable fees should be levied on annual maintenance of membership. Cross-selling with other financial products should be prohibited unless the members give consent. A standardized contract form should be prepared in advance with clear legal clauses for judgment in favor of consumers in case of disputes.

In relation to consumer protection, sound practices for delinquent debt recovery should be established. Various acts that threaten, intimidate and harass credit card users in relation to debt collection should be carefully filtered out. Sound debt collection practices will help to not only protect the already distressed individual's welfare but also establish belief in the financial system.

It is necessary to establish a fair amount of balance between efficient use of credit information and privacy protection, for the usage of credit information could contribute to improving economic efficiency on the one hand but infringe on individuals' privacy on the other. The balance should be determined by high level decision makers with clear economic and legal objectives.

Another important policy in relation to information accumulation is the government initiatives to collect relevant data. It is ideal to find the data that does not infringe on consumers' privacy but helps identify creditworthiness of borrowers. It is requested to assemble a discussion panel among policymakers and practitioners to identify useful data fields. The members exchange ideas and prepare necessary legal measures to acquire the information once identified. This task should be launched by the ministry of finance which can attract active participation of the central bank, SATIM, commercial banks, non-bank financial companies like lease companies, wholesale and retail vendors, etc.

# 1. Introduction

The Algerian economy has been brisk for the past several years. Economic growth has been sustained, inflation has remained low, and unemployment has declined steadily, albeit still high in level. Recently, IMF (2007b) stated the main reasons for these good performances to be attributable to appropriate macroeconomic policies as well as favorable external environments. The optimistic economic outlook for Algeria is anticipated to persist for the midterm due to high hydrocarbon prices and consequent current account surplus.

Despite such macroeconomic growth and stability, Algeria faces structural challenges in infrastructure, especially in the financial system. Banking sector reforms such as privatization of state banks and modernization of the payment system are priorities. Algeria has achieved partial success in the areas of improving governance of public banks and strengthening the financial supervisory system but still suffers from a massive volume of non-performing loans in public banks. As for the modernization of the payment system, it has created a new information sharing system but has not yet planted a transaction mechanism based on the system.

In order to facilitate the development of a modernized payment system and further the credit system, it is necessary to establish public software like a relevant supervisory system as well as to nurture an environment where private businesses smoothly function. In this respect, this chapter looks into the factors the Algerian government officials should keep in mind when constructing regulatory environments for credit card business.

Korea's recent credit card experiences are heavily referred to for the following reasons. First, Korea has a relatively short history of credit card business, but well established credit card culture in terms of scope, coverage and transaction amounts. Since Korea is one of the emerging market economies, it may deliver practically applicable implications for Algeria which has turned into a market economy. Second, despite its rapid development, Korea's credit card industry has exposed numerous problems that emerging market economies may face. The most typical example is illustrated in the so called Plastic Bubble in 2003. The entire cycle of boom-bust-reconstruction of the credit card industry around the episode presents many lessons not only for researchers but also practitioners all over the world. Third, Korea's financial supervisory system, which is known to be quite well functioning in spite of short period of reforms, may set guidelines for Algeria in the field of financial restructuring processes. Thus, this paper makes an attempt to introduce Korea's financial regulatory system with the focal point on the credit card business.

The rest of the chapter is organized as follows. In section 2, the Algerian financial system is briefly reviewed. Based on the reports from international organizations like the IMF and World

Bank, it introduces the overall landscape of the banking sector and its regulatory environments and then summarizes the major issues in the financial sector. Section 3 conveys the Korean financial regulations on credit card business in terms of prudential and conduct-of-business (COB) regulations. It also highlights the 2003 credit card liquidity crisis and outlines policy lessons. In section 4, policy recommendations related to setting up regulations for the credit card business in Algeria will be put forth. Finally, section 5 makes concluding remarks.

# 2. Financial System in Algeria

## 2.1. Overview

Algeria is essentially a cash based economy. Since the transition from a planned economy to a market one in the early 1990s, Algeria has undertaken various reform measures to modernize its financial system. Despite all these efforts and growing financial transactions in the private sector, state owned banks' lending to public entities is still dominant and financial markets are in infancy. Although 15 private banks were licensed between the period of 1998 and 2003, state owned banks have still dominated the financial sector. Private banks once accounted for 26% of credit to the private sector, but the financial scandal in 2003, or bankruptcy of the Khalifa Bank, led the central bank to force most private banks to close or to merge with state owned banks. Now, the banking system is dominated by six state owned banks with a 95% market share.

Table 5-1 ●● Algeria: Distribution of Credit in the Economy by Sector, 2001-2005

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| | (In billions of dinars; end-of-period) | | | | |
| Public sector | 740.3 | 715.5 | 791.4 | 859.3 | 895.7 |
| Private sector | 337.9 | 551.0 | 588.5 | 675.4 | 882.5 |
| Local administration | 0.2 | 0.3 | 0.3 | 0.3 | 0.1 |
| Total | 1,078.4 | 1,266.8 | 1,380.2 | 1,535.0 | 1,778.3 |
| | (Annual percentage change) | | | | |
| Public sector | 5.5 | -3.3 | 10.6 | 8.6 | 4.2 |
| Private sector | 15.8 | 63.1 | 6.8 | 14.8 | 30.7 |
| Local administration | 0.0 | 50.0 | 0.0 | 0.0 | -66.7 |
| Total | 8.5 | 17.5 | 8.9 | 11.2 | 15.8 |
| | (In percent of total credit) | | | | |
| Public sector | 68.6 | 56.5 | 57.3 | 56.0 | 50.4 |
| Private sector | 31.3 | 43.5 | 42.6 | 44.0 | 49.6 |
| Local administration | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Bank of Algeria; IMF (2007b).

Foreign banks are allowed to operate, but their market share is quite limited. Citibank was the first foreign bank to be licensed in Algeria. Now there exist more than ten foreign banks; the major ones are Societe General, BNP-Paribas, Arab Banking Corp., Natexis and Cititbank.

Recently, HSBC and Deutsch Bank have been granted licenses to open branches in Algeria. Foreign banks were expected to play a major role in the modernization of the banking system, but so far, lack of branch network has worked as a major obstacle for expanding businesses.

Table 5-2 ●● Algeria: Number of Branches of Financial Institutions, 2001-2005

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| Bank of Algeria | 49 | 49 | 49 | 49 | 49 |
| Banque de l'Agriculture et du Développement | | | | | |
| Rural (BADR) | 317 | 314 | 321 | 326 | 329 |
| Banque Extérieure d'Algérie (BEA) | 76 | 76 | 88 | 82 | 86 |
| Banque Nationale d'Algérie (BNA) | 190 | 173 | 171 | 172 | 191 |
| Crédit Populaire d'Algérie (CPA) | 135 | 120 | 123 | 126 | 130 |
| Caisse Nationale d'Epargne et de Prévoyance (CNEP) | 200 | 200 | 193 | 195 | 197 |
| Société de Refinancement Hypothécaire (SRH) | 1 | 1 | 1 | 1 | 1 |
| Caisse Nationale de Mutualité Agricole (CNMA) | 0 | 62 | 62 | 62 | 65 |
| Union Bank | 1 | 1 | 2 | 0 | 0 |
| El-Khalifa Bank | 24 | 60 | 0 | 0 | 0 |
| Mouna Bank | 1 | 1 | 1 | 1 | 0 |
| Banque Commerciale et Industrielle d'Algérie (BCIA) | 12 | 24 | 0 | 0 | 0 |
| Algerian International Bank | 1 | 1 | 1 | 1 | 1 |
| Arcobank | 0 | 0 | 1 | 1 | 0 |
| Compagnie Algérienne de Banque (CAB) | 4 | 9 | 9 | 6 | 0 |
| Bank El Baraka | 8 | 8 | 10 | 1 | 11 |
| Citibank | 1 | 4 | 4 | 4 | 4 |
| Arab Banking Corporation (ABC Algeria) | 1 | 4 | 4 | 4 | 4 |
| Société Générale | 2 | 4 | 5 | 8 | 13 |
| Natexis El Amana Bank | 1 | 1 | 1 | 3 | 3 |
| Al Rayan Algerian Bank | 1 | 1 | 3 | 5 | 7 |
| Arab Bank | 1 | 1 | 1 | 1 | 2 |
| BNP Paribas El-Djazair | 1 | 2 | 3 | 5 | 10 |
| Banque Générale Méditerranéenne | 1 | 1 | 1 | 2 | 2 |
| TRUST Bank-Algeria | 0 | 1 | 1 | 1 | 3 |
| The Housing Bank for Trade and Finance-Algeria | 0 | 0 | 1 | 2 | 2 |
| Gulf Bank-Algeria | 0 | 0 | 0 | 1 | 1 |
| Sofinance | 0 | 0 | 1 | 1 | 1 |
| Total | 1,198 | 1,275 | 1,224 | 1,232 | 1,276 |

Source: IMF (2007b).

Domestic private banks are mostly family owned, thus often lacking transparency. For example, the collapse of the Khalifa bank, which was then the largest private bank, and BCIA in 2003 showed these characteristics. The failure of the two banks cast serious negative influences over the Algerian financial system, undermining public confidence in the private banks.

The bank failures led to amendment of the Law on Money and Credit. The amended law raised entry barriers and imposed more proactive supervision of banks and implementation of strict regulatory reforms. The amended law could possibly weed out some private banks that may not be able to comply with the new requirements, while foreign banks are not seriously affected by the law. Indeed, they welcome the rise in banking standards stipulated in the law.

Private banks in Algeria remain cautious in extending credit. They would rather focus on secured short-term lending and trade credits. These conservative behaviors of private banks could be well understood, but may work as one of the factors that weaken the overall private sector activities. As a matter of fact, the expeditious development of the private sector in Algeria should be in tandem with active involvement of private banks such as extending credit facilities and advisory services for local businesses. Furthermore, the integration of Algeria in

Table 5-3 ●● Algeria: Distribution of Credit the Economy by Maturity, 2001-2005[1]

(In billions of dinars; end-of-period)

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| | (In billions of dinars; end-of-period) | | | | |
| Short-term | 513.3 | 628.0 | 773.6 | 828.3 | 924.3 |
| Medium-term | 529.5 | 602.8 | 559.1 | 654.6 | 801.1 |
| Long-term | 35.6 | 36.0 | 47.5 | 52.1 | 52.9 |
| Total | 1,078.4 | 1,266.8 | 1,380.2 | 1,535.0 | 1,778.3 |
| | (Annual percentage change) | | | | |
| Short-term | 9.9 | 22.3 | -7.2 | 17.1 | 22.4 |
| Medium-term | 7.4 | 1.1 | 31.9 | 9.7 | 1.5 |
| Long-term | 5.3 | 17.5 | 8.9 | 11.2 | 15.8 |
| Total | 8.5 | 23.2 | 7.1 | 11.6 | |
| | (In percent of total credit) | | | | |
| Short-term | 47.6 | 49.6 | 56.1 | 54.0 | 52.0 |
| Medium-term | 49.1 | 47.6 | 40.5 | 42.6 | 45.0 |
| Long-term | 3.3 | 2.8 | 3.4 | 3.4 | 3.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Bank of Algeria; IMF (2007b).

Note: 1. Conversions of banks' claims on public enterprises to claims on the government results, other things being equal, in a decrease in credit to the economy.

the global economy calls for a more efficient banking system where a major role should be initiated by private banks. In this sense, Algerian banking remains far from supporting brisk real economic activities.

In the Article IV 2006, IMF (2007a) estimated that gross non-performing loans (NPLs) accounted for 38.2% of total lending by the state banks, compared with 5.8% for private banks. Total provisions rose to 49.3% of NPLs, but capital adequacy ratios remained much lower for public banks (12%) than for private banks (23.7%). Any structural reform of the banking sector will remain dependent on the SOEs reducing their reliance on “soft loans”.

## 2.2. Financial Supervision

The banking law of April 10, 1990 established the principles and modalities of banking surveillance in Algeria. Supervisory functions are entrusted to three institutions, each of which enjoys operational independence in practice. The institutions consist, first, of two collegiate bodies, the Monetary and Credit Board, which license lending institutions and exercises regulatory authority, and the Banking Commission, which is in charge of off-site monitoring and on-site examination and has jurisdiction for imposing sanctions. The third institution is the Bank of Algeria, which prepares legislation that essentially regulates all bank regulatory matters and carries out audits - either directly or as delegated by the Banking Commission. Naturally, the Bank of Algeria has the right to request any information it may consider necessary in drawing up the legislation.

It is the Bank of Algeria that, in practice, regulates the overall financial system. Although the Banking Commission and the Monetary and Credit Board have their discretionary powers, these institutions are chaired by the Governor of the central bank.

Laws and regulations underpinning bank supervision may not be formally deficient. As IMF (2003) stated, however, the extensive state ownership of banks severely undermines regulatory governance. Many uncertainties also surround the preconditions for effective banking supervision: sound and sustainable macroeconomic policies; well-developed public infrastructure; effective market discipline; efficient resolution of problem banks; and appropriate level of systemic protection.

Bank licensing has been tightened but there exists more room for close scrutiny. Previously, licenses had been given to individuals lacking experience and owners’ net worth could not be reliably established. In fact, the 1990 Law on Money and Credit did not require that capital be fully paid-in. This culminated in the failure of the Khalifa Bank with an asset size of 3 percent of GDP.

The Banking Commission does not routinely verify that banks have adequate tools with which to monitor and evaluate their exposure. In practice, the lending policies of the major banks are not adequately based on sound assessment of the risks of non-recovery of payments due. Moreover, provisions against doubtful claims are not adapted to the real risk of incurring losses. Furthermore, loans to groups of related borrowers are not clearly defined, and often reporting requirements are not met. In addition, while there are prudential regulations regarding internal controls for banks, they are not fully placed in financial institutions and overseen by the authorities. The authorities do not always take immediate corrective action on numerous institutions failing to observe prudential regulations, in some cases, on a routine basis.

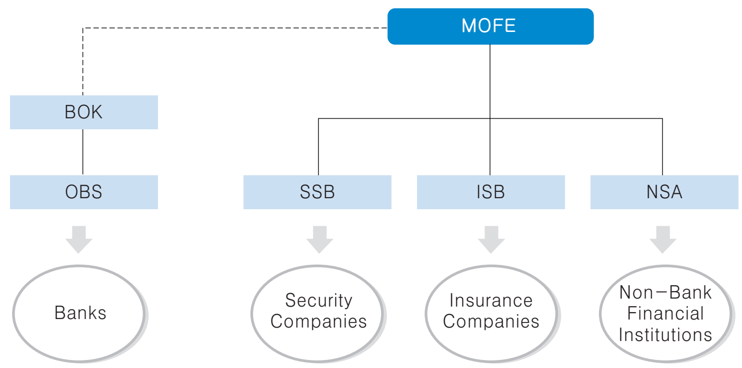
## 3. Experience of Korea

This part is introduced to take some lessons from Korea's experience. Korea's boom-bust in the credit card business, regulatory responses to the crisis and the industry reconstruction afterwards are quite unique experiences.

### 3.1. Financial Supervisory System

The 1997 financial crisis worked as a momentum for the implementation of reforming the financial supervisory system in Korea. Due to growing convergence of financial services and blurring of distinctions among various financial sectors, there had been an increasing need for a consolidated financial market regulator to oversee all financial institutions and markets under a single roof. With this recognition, the Korean government initiated the Presidential Committee on Financial Reform (PCFR) in early 1997. After a series of analyses and discussions, the committee submitted a host of policy recommendations which proposed the establishment of the consolidated financial supervisory authority.

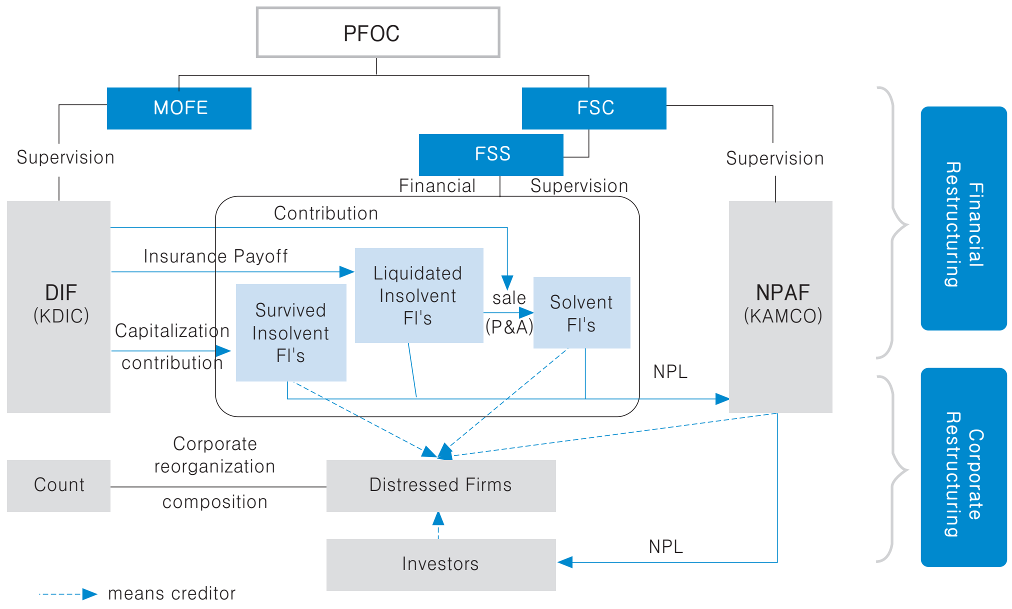
Figure 5-1 ●● Financial Supervisory System before the Crisis




As seen in <Figure 5-1>, up until the end of 1997, the Korean financial supervisory system consisted, under the leadership of the Ministry of Finance and Economy (MOFE), of four separate public organizations: the Office of Bank Supervision (OBS), the Securities Supervisory Board (SSB), the Insurance Supervisory Board (ISB), and the Non-bank Supervisory Authority (NSA). The plan that the PCFR suggested to consolidate the four institutions, however, was not passed until Korea underwent currency floating in late 1997 and subsequently asked the International Monetary Fund (IMF) for the international rescue programs. In fact, the Bank of Korea Act and the Act on the Establishment of Financial Supervisory Organizations were submitted to the National Assembly for passage on August 23, 1997, but passed on December 29, 1997.

On April 1, 1998, the Financial Supervisory Commission (FSC) was established as Korea's first integrated financial supervisory body, which immediately took on the task of reforming domestic financial institutions and large business groups and oversaw restructuring in the corporate and financial sectors in the wake of the crisis. Note the roles of FSC in financial and corporate restructuring in <Figure 5-2>. As part of the organization of the financial supervisory authorities in Korea, the Securities and Exchange Commission, which supervised the securities market in Korea, was dissolved and absorbed into the FSC and the Securities and Futures Commission (SFC) established within the FSC. On January 1, 1999, the OBS, SSB, ISB, and NSA were consolidated into a single supervisory body as the Financial Supervisory Service (FSS), thus creating a present integrated financial regulatory and supervisory system in Korea.

Figure 5-2 ●● Financial Restructuring Flowchart during the Crisis



## 3.2. Regulations on Credit Card Business

Credit card business is classified as one of the credit-specialized financial institutions (CSFIs) in Korea, along with leasing companies, installment finance companies and new technology venture capital companies. CSFIs, which are non-deposit-taking institutions, provide credit by raising funds mainly through issuing bonds and borrowing from other financial institutions. Credit card companies (CCCs), which were first established in 1969, provide consumers with credit card-related financing. The main businesses of CCCs in Korea include (1) issuance and administration of credit cards, (2) settlements of credit card charges, and (3) establishment and maintenance of a merchant network for credit card uses. As of April 2007, there are six CCCs and 16 banks operating credit card businesses.

The Credit-specialized Financial Business Act (CSFBA) is the governing law over the credit card business. Even if banks are bestowed to run credit card business by the Banking Act, their credit card businesses are regulated by this act. According to CSFBA, a person seeking to engage in credit card service business must be a stock corporation and receive a business license from the FSC and FSS. CCCs seeking to conduct business in one or two credit-specialized financial business areas must have a minimum legal capital of 20 billion KRW (Korean won) and those seeking to manage more than three businesses must have at least 40 billion KRW as capital. In addition, the eligibility conditions for ownership and facility requirements are tightly imposed. For instance, a person who has been subject to a fine or more severe punishment in violation of any finance-related acts and subordinate statutes in the most recent three years on the basis of the date of application for license or registration shall not obtain a license or registration.

Since CCCs may not take deposits, or make borrowing contracts with anonymous people in public, they have weak fund raising capacities. In order to circumvent this disadvantageous position, they are allowed to issue bonds up to ten times equity capital. This legally allowable leverage ratio is much higher than that of common stock companies, or four times equity capital, according to the Commercial Act. Furthermore, CCCs may issue bonds temporarily exceeding the maximum limit in order to repay the bonds issued within a month. However, there exist numerous regulations on their asset management. CCC’s total value of real estate used for business must be less than its equity capital, which seems to restrain excessive acquisition of real estate. Also, the aggregate amount of loans to related parties shall not exceed its equity capital.

In order to ensure sound management of CCCs, CSFBA contains clauses for corporate governance stated above. Additionally, CCC shall assign three or more outside directors who are not engaged in the permanent affairs of the board of directors. In this case the outside directors shall not be less than one half of the total number of directors. The audit committee of

CCC shall fill not less than two thirds of the total members with outside directors. Further, CCC shall set forth the basic procedures and criteria, namely criteria for internal control, to be observed by its officers and employees in performing their duties in order to comply with the CSFBA and subordinate statutes, to make its property operation sound, and to protect customers. CCC shall assign at least one compliance officer to check whether or not the criteria for internal control are observed, and to investigate the violations of said criteria, and to report thereon to the auditor or the audit committee. It is necessary to go through a resolution of the board of directors when CCC intends to appoint or dismiss the compliance officer.

FSC is authorized to exercise overall supervisory powers. These powers include imposition of guidelines for sound management, supervision, examination, investigation, etc. When FSC deems that there exist concerns over impeding a sound operation of CCCs, it may take the following measures: (1) demands for the attention or warning to CCCs, or warning or censure against their officers or employees; (2) corrective orders against the relevant offenses; and, (3) advice on the dismissal of officers or demands for a suspension of their duties. FSS may inspect the business and asset status of CCCs and, in such a case, CCCs shall furnish the books, recorded documents and other data necessary for inspection, or have the related persons attend to state their opinions. FSS can hear from the auditor or audit committee of CCCs about the soundness of management, if needed.

As for the guidance of sound management, FSC may set forth the criteria on the following matters: adequacy of equity capital, soundness of property, liquidity and other matters necessary for securing the soundness of management. Regarding capital adequacy of CCCs, the FSC adopted consolidated risk-adjusted capital standards as recommended by the Bank for International Settlements (BIS) as a prudential measure. The cut-off minimum regulatory requirement of the ratio is 8% according to Regulations on Supervision on Credit-specialized Financial Business (RSCSFB). RSCSFB also designates Korean currency denominated liquid asset to liquid liability ratio (liquidity ratio) to be over 100%. Also, CCCs shall maintain over one month overdue ratio under 10%.

In order to calculate BIS risk-adjusted capital adequacy ratio, the assets held by CCCs should be classified and corresponding loan loss provisions made. Like those of commercial banks, the assets of CCCs are classified into (i) normal, (ii) precautionary, (iii) substandard, (iv) doubtful, and (v) estimated loss under the forward-looking criteria (FLC). Here is the definition of the above classification:

- Normal: credit exposures to borrowers who maintain a certain level of credit standing as well as sound business standards and borrowers whose loans are less than one month overdue, but whose debt-serving capacity is sufficient

- Precautionary: credit exposures to borrowers whose credit status call for lender attention; in particular, credit exposures to borrowers whose loans are overdue at least one month but less than three months or whose borrowings exceed the volume of their sales

- Substandard: credit exposures to borrowers with unfavorable pattern of banking transactions or credit status and exposures to borrowers who must agree to a definite repayment schedule with the lender; this can include exposures to borrowers who have been in arrears for over three months but no less than six months, or for whom a suspension of serving or reduction of interest has been granted

- Doubtful: credit exposures in excess of the amount expected to be collected from customers classified as substandard that is expected to be a loss, but has not yet been realized as such; normally the overdue restriction on doubtful assets is the same as substandard, but they are deemed more risky

- Estimated loss: credit exposures in excess of the amount expected to be collected from customers classified as substandard that must be accounted as a loss because collection is not possible in a foreseeable period; in the case of CCCs, more than six months overdue assets are classified as estimated loss

The above classification for assets held by CCCs is much stricter than the ones applicable to other financial institutions. This fact reflects the riskiness of CCCs' assets during the liquidity crisis of CCCs in 2003 and 2004.

Financial institutions must accumulate minimum loan loss provisions for their assets according to the asset classifications. The minimum ratio of loan loss provisions varies depending on whether the asset is a loan or credit card asset. For example, the minimum ratio of

Table 5-4 ●● Minimum Loan Loss Provisions

(Unit: %)

| | Credit Card Company | | Bank | | |
|---|---|---|---|---|---|
| | Loan assets | Credit Card Loans | Corporate Loans | Housing Loans | Credit Card Loans |
| Normal | 0.5 | 1 | 0.5 | 0.75 | 1 |
| Precautionary | 1 | 12 | 2 | 8 | 12 |
| Substandard | 20 | 20 | 20 | 20 | 20 |
| Doubtful | 75 | 60 | 50 | 55 | 60 |
| Expected loss | 100 | 100 | 100 | 100 | 100 |

normal loan assets is 0.5% but the minimum ratio of normal credit card assets is 1%. The difference is more vivid in the case of precautionary assets: minimum requirement for the loan loss provisions of a normal loan is just 1%, but precautionary credit card assets should accumulate at least 12%. This strict provisioning requirement also reflects the high likelihood of distress and loss rates after default of the classified credit card assets during the so called plastic bubble in 2003 and 2004.

One of the interesting features in credit card business regulations in Korea is the existence of prompt corrective actions (PCA) which normally applies to depository financial institutions such as banks and thrifts. These financial institutions are exposed to systemic risks where solvent and sound banks are forced to confront contagious runs triggered by either the depositors' misconception or rational expectation on the possibility of their financial distress. In order to contain systemic risks, many countries introduce a deposit insurance system under which financial consumers are kept safe even on the verge of outbreak of systemic crisis. Nevertheless, once a systemic crisis occurs, the deposit insurance fund is not sufficient to contain the costs incurred, so it is necessary for the government to intervene in distressed financial institutions with taxpayers' money. It has been known, however, that government intervention might be costly due to regulatory forbearance, or policymakers' gambling in the course of crisis management, of which an example was shown in the Savings and Loan Association Crisis in the United States. PCA was instituted under this background for the purpose of minimizing the costs of taxpayers' money at times of distress of insured financial institutions by partly eliminating regulatory forbearance. Therefore, PCA is directly related to the deposit insurance system, which in turn has something to do with systemic risks.

Theoretically, credit card business, as a credit-specialized financial business, is not directly connected to systemic risks, for CCCs do not have deposit taking function. The financiers towards CCCs are financial professionals like large financial institutions or institutional investors, which are not necessarily protected by the public financial safety net. Actually, they should not be protected in the sense that market discipline helps sound management of the financial system. Despite the theoretic rationale, Korea introduced PCA even in credit card businesses on July 1, 2002, in order to put an emphasis on the soundness of CCCs.

The PCA for CCCs is triggered based on BIS capital adequacy ratio. If a CCC does not meet 8% BIS ratio, management improvement recommendation is imposed by FSC. Under this measure, it may be subject to organizational changes, specific allowances, restrictions on investments in fixed assets, entry into new business areas, new investments and dividend payments, reduction or increase of its capital, or disposition of non-performing assets. When its BIS ratio becomes lower than 6%, a harsher PCA measure, or management improvement requirement, is automatically triggered. With this measure, it may be subject to consolidation of operating offices, a freeze on new investments, a reduction of risk assets, control of interest rates, replacement of senior management and external auditors, suspension from some business areas, dissolution, or merger or consolidation with other financial institutions. Once a CCC's BIS ratio hovers below 1%, it receives a management improvement order, under which it is subject to a partial or complete cancellation of equity capital, suspension of the top management, appointment of a receiver, merger with or consolidation with other financial institutions, suspension of business for up to six months, or revocation of business license.

Table 5-5 ●● Prompt Corrective Action Enforcement Criteria

| Type of PCA | Criteria |
|---|---|
| Management Improvement Recommendation | • Adjusted equity capital ratio < 8%; or<br>• 3rd grade or above for capital adequacy or asset soundness, with an overall rating of 4th grade |
| Management Improvement Requirement | • Adjusted equity capital ratio < 6%; or<br>• 4th grade or above for capital adequacy or asset soundness, with an overall rating of 4th grade |
| Management Improvement Order | • Adjusted equity capital ratio < 2%;<br>• An overall rating of 5th grade; or<br>• Normal operations are hindered and the CCC does not or cannot implement improvement plan, even though it has been urged to do so |

To attain public awareness, CCCs are required to disclose their annual reports, including the balance sheets and the income statements for each fiscal year. The disclosure must cover financial information relating to the asset soundness, profitability, productivity, and the sources and uses of their capital. Furthermore, to receive supervisory data on CCCs, FSC and FSS conduct on-site examination and off-site surveillance.

On-site examination may take place as a regular examination (general examination) and a targeted examination (partial examination). Regular examinations are conducted comprehensively over the entire operation of a CCC. All head offices of individual CCCs as well as a number of selected branch offices are subject to regular examinations. Targeted examinations are carried out on certain offices or certain aspects of businesses if the FSS determines that targeted examinations are justified and necessary in light of the targeted institution's business status. The examination typically focuses on asset soundness, regulatory compliance, internal adequacy controls, financial irregularities, reliability of financial records and disclosure and data collection. During the examination, the FSS evaluates management status and examines the risk management status of the examinee institution. The actions and recommendations of the FSS following the examination may include PCA. In order to ensure the effectiveness of on-site examinations, the FSS also receives regular business reports from CCCs, analyzes the current status of its management, and collects other relevant information.

In addition to on-site examinations, the FSS also undergoes off-site surveillance of CCCs. The FSS's CCC examination department appoints an examiner and an examining team to ensure effective off-site surveillance. Off-site surveillance is mainly conducted with the ordinary surveillance system in place to monitor the soundness of CCCs. Off-site surveillance is also accomplished with the analysis of reports and documents. The FSS receives a call report from each CCC. The call report includes financial information regarding assets and liabilities of the CCC as well as general information on such matters as the number of employees and branches. Examiners verify the reliability of the call report during their on-site examinations.

Along with the sound management of CCCs, consumer protection is another big issue for credit card business regulations. The Credit-specialized Financial Business Act (CSFBA) contains a fair amount of clauses on consumer or privacy protection. The act stipulates that credit card merchants shall not refuse to sell goods or to provide services or treat card holders unfavorably because of transaction by credit card. Credit card merchants may not pass on merchant fees to credit card holders. CCCs should set individual credit limit pursuant to income, asset, guarantee provided, capability of settling the amounts of using credit cards, etc.

According to the Regulations on Supervision on Credit-specialized Financial Business (RSCSFB), average membership fee should be less than 10,000 KRW. RSCSFB specifies the definition of "street" while it prohibits soliciting applications for membership on the street. It stipulates that the legal sense of street includes not only public and private roads under the act but also public areas and facilities such as parks, stations, bus terminals, playgrounds, shopping malls, museums, athletic fields and schools. If CCCs or solicitors of CCCs are to make contact with customers, they shall inform them of the purpose of the visit and obtain prior consent by objectively verifiable methods such as letters or e-mails. In the case of sales over 500 thousand KRW, participating credit card merchants shall verify credit card users by checking identification cards.

Creditors often encroach upon debtors' privacy when the latter miss payments due and the former try to collect debts. When collecting debts, CCCs shall not commit the following acts: (1) acts of violence, threat or intimidation (2) acts causing concerns to, or demanding payment from, persons related to the debtor (such as cosigner, relative and fiancé, cohabitant, or coworker; the same hereinafter) without reasonable cause (3) acts of delivering false information on liability to debtor or person related (4) acts informing disadvantages one would have when registered on credit delinquency list in a false or exaggerated manner (5) acts threatening to sue for fraud or suing for fraud even when debtor had not forged documents to prove payment ability (6) visiting or making telephone calls late at night (between 9 pm and 8 am) and, (7) other acts of collection in misalignment with ordinary methods or procedures, resulting in damages to privacy and peace at work of the debtor or persons related to the debtor.

Ultimately, CCCs are constrained from exploiting their customers' credit information. CCCs shall ensure that credit information of their membership is not disclosed for purposes other than their business. CCCs shall obtain written consent to disclose credit information of their membership to any third party, each paper drawn up for its own object separately from application form for membership pursuant to the Use and Protection of Credit Information Act (UPCIA). CCCs shall not deny issuance of a credit card because their members do not consent to disclosure of credit information to a third party other than credit information businesses and credit information collection agencies stipulated under the UPCIA.

According to CSFBA, CCCs shall prepare and administrate standardized contracts and RSCSFB dictates more in detail as follows. A standardized contract shall be drawn up impartially in accordance with the principle of trust and good faith. Interest of the customer shall be protected to the highest degree. A sound financial business order shall be preserved. The responsibility for illegal usage of a credit card shall not be imputed to customers unfairly. In the event the meaning of a standardized contract is not clear, it shall be construed in favor of customers.

## 3.3. Consumer Protection

FSS operates a financial dispute settlement center to mediate disputes that arise from financial transactions between consumers and financial institutions, including CCCs. Upon request for mediation, FSS examines and verifies the facts concerning the dispute and presents its opinion as a proposal to settle the dispute of both parties. Acceptance of FSS mediation is entirely voluntary, which means that either party may reject the resolution proposed by FSS.

The procedure of financial dispute settlement was established in accordance with the Act on the Establishment of Financial Supervisory Organizations (AEFSO), which mandates FSS to protect financial consumers who have trouble with a financial transaction with financial institutions. FSS mediation is also intended to protect consumers from financial institutions' illegal activities that abuse their superiority to the consumers in terms of bargaining position and other resources.

Consumer Protection Center (CPC) under FSS performs consumer services in the following four primary areas: 1) receiving and processing consumer complaints, 2) searching for financial records of deceased persons on behalf of the legatee, 3) improvement of financial regulation system from analysis of consumer complaints, and 4) consumer education.

## 3.4. Credit Card Crisis in 2003

The credit card crisis in 2003 was a bitter experience for financial regulators, let alone numerous credit delinquents and credit card companies in Korea. The crisis is closely related to the previous 1997 financial crisis and recovery policies of the crisis. Facing severe macroeconomic contraction due to the unprecedented shocks, the Korean economy underwent a negative economic growth rate in 1998 and a soaring unemployment rate. In the midst of a credit crunch, Koreans were pinched to reduce consumption expenditures while spending a huge amount of income to repay the debts at high interest rates. This, in turn, aggravated macroeconomic performance.

The year 1999 brought a drastic rebound in terms of economic growth rate with an exit from the deep trough in the previous year, but this turnover did not allow policymakers to perceive permanent recovery. In order to secure this reversal, the Korean government tried to make various expansionary policies such as cutting short-term nominal interest rates, increasing public expenditures, etc. In the field of financial markets, deregulation was pursued along with enhanced risk management practices. However, most financial institutions were not ready to adapt to financial deregulation due to their weakness of financial soundness and capital adequacy. Under these circumstances, credit card companies became a direct beneficiary of financial deregulation. The most typical example was the removal of legal cash advance limits in 1999. Before the removal, individual cash advance was controlled up to 700,000 KRW, no matter how high his or her creditworthiness was. Financial innovations to evaluate individual debt service capacity and relevant infrastructure were not fully fledged yet, but the deregulation led most CCCs to compete with each other to increase market shares. Along with this credit ceiling removal, CCCs made a decision not to share the information about customers' available credit amounts and card issuances, which had been circulated industry wide in the credit card business. This measure implies unfettered competition among CCCs that have a tendency to take on risks.

Table 5-6 ●● Size of Credit Card Credit

(Unit: Trillion KRW)

| | 1995 | 1998 | 2000 | 2002 |
|---|---|---|---|---|
| Total Credits | 51.6 | 63.6 | 237.3 | 680.8 |
| Non-bank CCC | 10.8<br>(20.9%) | 32.5<br>(51.1%) | 148.8<br>(62.7%) | 496.6<br>(72.9%) |
| Cash Advance | 26.4<br>(51.2%) | 32.7<br>(51.4%) | 157.3<br>(66.3%) | 412.8<br>(60.6%) |

Table 5-7 ●● Multiple Credit Card Holders' Transactions

(Unit: 10,000 persons, trillion KRW)

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|
| No. of Multiple CC Holders | 311 | 345 | 435 | 719 | 1,023 | 975 |
| Credit Sales of Multiple CC Holders | 10.4 (34%) | 13.0 (30%) | 24.3 (30%) | 48.6 (28%) | 85.2 (32%) | 85.8 (47%) |
| Cash Advance Multiple CC Holders | 13.7 (42%) | 19.2 (40%) | 66.3 (46.%) | 149.8 (56%) | 249.7 (70%) | 171.8 (88%) |

The outcome was a credit explosion and financial kiting or pyramiding by credit card holders. As seen in <Table 4-6>, the credit supplied by CCCs increased over ten times during the period from 1998 to 2002. Especially, non-bank CCCs led the supply of credits during the period with cash advancement rather than credit card transactions. <Table 4-7> shows that credit card holders tended to issued more than two cards up until the crisis broke out. <Table 4-8> shows that credit revolving rates also increased in tandem with the number of multiple card holders. This means that unlimited credit was supplied in this era.

Table 5-8 ●● Revolving Credits

(Unit: 100 Million KRW, %)

| | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|
| Revolving Credits | 71,878 | 106,346 | 135,962 | 191,071 | 160,840 |
| Revolving Credit / Total Credits | 7.2 | 11.1 | 15.9 | 24.8 | 29.2 |
| Over-due Rate Revolving Credits | 24.7 | 26.0 | 18.7 | 21.8 | 27.2 |
| Over-due Revolving Credit / Total Over-due Credit | 26.8 | 30.4 | 30.8 | 45.1 | 56.5 |

Despite this evolution of increasing credit and subsequent risks, the financial supervisory authorities did not fully notice the potential problems. At least then CCCs were understood to be one of the most profitable businesses in Korea. Even if the distress asset ratio hovered over 5% in 2001 and 2002, the CCCs made a fortune with which they could sufficiently resolve the loan loss. In fact, the moderate level of payment overdue contributed to CCCs' profitability due to high penalty interest rates as long as the customers were able to get access to other credit lines. They borrowed cash advances from other CCCs to make payments in arrears to existing credit suppliers.

This credit explosion was supported by ever increasing funds to CCCs. Due to high profitability and slightly higher interest rates than those paid by companies at the same credit rating, CCCs were able to attract funds from institutional investors in the bond markets. Furthermore, they took advantage of securitization techniques to raise more funds. The asset backed securities (ABS) were issued based on the credit receivables and cash advances as underlying assets. The ABS was deemed preferable since this type of bond issuance was not applied to bond issuance regulation by CSFBA. As a result, the ABS issuance became one of the major funding sources by CCCs which were desperate to be financed under the presence of presumably arbitrage opportunities. <Figure 5-3> shows the striking increase of ABS issuance until the outbreak of the crisis.

This financial pyramiding cannot be sustained forever. First of all, the ever-increasing non-performing loans did not enable CCCs to issue bonds in the financial markets. As seen in <Figure 5-4>, the one-month overdue rates rose over the threshold at which CCCs made profits by the end of 2002. Then, financial markets were not sponsors of CCCs any longer. The lack of funds of CCCs started to push credit card holders to repay the debts and to strengthen their credit evaluations. Then, credit card holders who did not find other funding sources could not make payments, which again burdened the CCCs'asset soundness. Now, the vicious circle was triggered.

Figure 5-3 ●● Fund Raising by Issuing ABS: 1999-2003

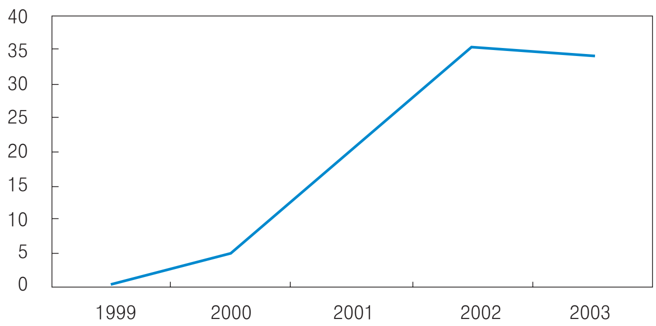
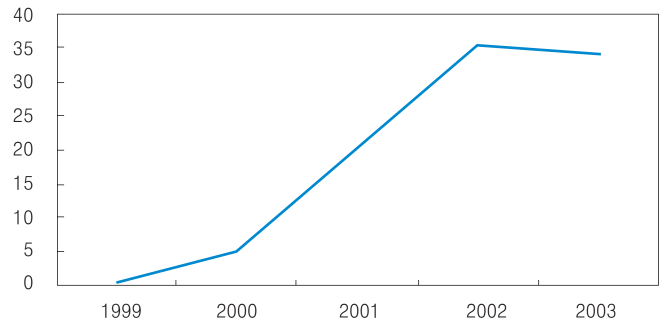


Figure 5-4 ●● Overdue Loan Rates: 1999-2003




In 2002, the FSC and FSS, which recognized the risks in the credit card industry, tried to strengthen regulations on cash advances, but it was in vain due to failure to receive consent by the Regulation Reform Committee (RRC). RRC had a position that CCCs were not related to systemic concerns and over-regulation on the business was not consistent with consumer welfare. In the second half of 2002, however, the financial supervisory authorities strengthened other regulatory measures. First, the ceiling on the cash advance ratio out of total credits was imposed. The ratio should be gradually curtailed to less than 50% by 2004. Second, FSC strengthened loan loss requirements. For example, CCCs should accumulate 100% loan loss provisions for loans overdue six months. Third, FSC revised decrees and regulations on PCA triggering BIS ratio, the definition of overdue rate from three months overdue to one month overdue, loan loss requirements on non-used credit lines, etc.

These strengthened supervisory measures seemed to be too late. Indeed, they influenced the management of CCCs in a negative way, or more rapidly aggravated the soundness of CCCs. Financial markets contracted to supply funds to CCCs. In the midst, fraudulent financial accounting by SK Global in early 2003 added to the hardship of CCCs. Bond markets were frozen and CCCs were pinched to a moratorium. Under these circumstances, financial supervisory authorities could not stick to market discipline because most fund suppliers to CCCs were commercial banks and life insurance companies. If the financial distress of CCCs had been contagious over these financial institutions, the credit card problems would not have remained in the credit card industry alone. Rather, a systemic crisis might have occurred. It is not easy to make a clear judgment on the advent of systemic crisis but policymakers had serious concerns.

The responding actions taken by the government were bailout on one hand and restructuring on the other. Banks which had a CCC as a subsidiary merged them with themselves. LG Card, a major non-bank CCC, was on the verge of insolvency in November 2003 as a result of an acute liquidity shortage, making restructuring necessary. In January 2004, the creditor banks took over the management of LG Card and provided debt rescheduling and other relief measures while accelerating business restructuring. In this process, the acquisition and restructuring of LG Card was initiated by Korea Development Bank (KDB) which is a policy purpose bank fully owned by the MOFE. This means quasi-public funds were injected to resolve the credit card company distress. In this sense, the measures taken by the government are understood as crisis resolution methods. Market discipline was partly imposed but most stakeholders' interests were preserved. For example, Korea Asset Management Corporation (KAMCO) purchased non-performing loans from CCCs and Bank of Korea injected 4 trillion KRW REPO transactions. In the meantime, the maturing bonds issued by CCCs were revolved. Credit rating for CCCs had been distorted toward easing their financial difficulties. Therefore, the essence of post-plastic bubble measures seems to be regulatory forbearance.

The credit card crisis brought about various aftermaths. First and most importantly, nearly 4 million credit delinquents could not manage normal life. In contrast with corporate difficulties, consumer credit delinquents caused by credit oversupply devastates consumers' welfare more seriously. Second, macroeconomic slowdown persisted since consumption growth became sluggish. On a disaggregate level, bi-polarization among good and bad performers widened and deepened. Third and positively, various insolvency procedures were devised and instituted to rehabilitate credit delinquents back to normal life. For example, consumer default existed in the law before the crisis, but more detailed procedures and necessary measures were legislated and applied after the crisis.

## 3.5. Lessons Learned from Korean Experiences

Specific features of Korean credit card business are summarized as follows. First, the credit card business is regulated by financial supervisors, neither being the Ministry of Law nor the Ministry of Internal Affairs. Among the policy objectives of efficient resource allocation and privacy protection, it is understood that the former is more emphasized in Korea. Thus, credit card companies are subject to very specific and detailed financial regulations to secure their sound management. Under this regime, regulations tend to be levied on institutions rather than activities. Second, credit information is also regulated by financial authorities. This fact is consistent with the policy focus of raising efficiency through vigorous financial transactions as the first priority, whereas privacy protection seems to be a secondary concern. Third, credit card companies are closely connected with commercial banks. Most banks run credit card business and underwrite bonds issued by non-bank credit card companies. In this sense, the credit card industry is exposed to systemic risks.

The Korean experience tells us about the significance of separation of credit card companies from systemic risks. In order to achieve this goal, credit card policies should not be influenced by macroeconomic policies like a tool of expansionary policy in a period of recession. Regardless of business cycles, a stringent risk management system should be built in and the soundness of credit card companies thoroughly monitored by professional supervisory staff based on timely and accurate information. It is also worthwhile to note how devastated consumers are when credit card companies become distressed. Massive individual credit delinquencies do not remain as only an economic problem. Rather, it is harder to resolve serious social problems which ensue.

Most importantly, policymakers should keep in mind the purpose of introducing and regulating the credit card business. The policy objectives depend on the level of economic and financial market developments. If efficient resource allocation is the purpose like in Korea, privacy protection could be a secondary concern. But even in this case, the government should seriously consider systemic risks, which are related to consumers' welfare in the end.

## 4. Policy Recommendations to Algeria

This section suggests policy recommendations about regulations for credit card business in Algeria based on Korean experiences. Despite relatively short experiences compared to those of advanced countries, the Korean case sheds much light on credit card regulations, especially in emerging market economies in the sense that inexperience coupled with market making is often accompanied by unanticipated problems. From a somewhat different perspective, these errors are quite easily foreseen, since the problems have common features in many cases. In this section, among others, the prudential conduction of business regulations is the main focal point and credit information usage will be taken into account afterwards.

### 4.1. Prudential Regulations on Credit Card Companies

In order to keep the soundness of credit card businesses, presumably operated by commercial banks, the financial regulatory authorities, the Bank of Algeria and Ministry of Finance, should establish clear accounting principles related to the credit advanced by card credit sectors. As seen in Korean experiences and as in most countries, credit card loans are more likely to become delinquent. Furthermore, the bad loans are less likely recovered vis-à-vis normal bank loans. For this reason, their appropriate risks should be carefully assessed based on past history of pure credit-based lending and necessary adjustments.

Currently, Algeria is at its infant stage in terms of pure credit lending even in bank loans, which constrains it from building a track record of credit delinquency likelihood and collection ratio out of sour loans. Indeed, Algeria faces difficulties in supplying pure credit loans due to lack of experience related to individual capability of debt services. However, the explosively growing credit in the real estate and automobile leasing sectors will surely cast some clues on the relevant information about potential credit card loans. Therefore, the Bank of Algeria is advised to make an attempt to gather loan information in diverse segments by the type of borrowers, the type of loans, the size of loans, the purpose of loans, geographical location, etc. Based on these information sets, the central bank may set and announce asset classification and loss provisioning standards to commercial banks which are eligible for credit card business.

When setting up the standards, the Bank of Algeria should be considerate and conservative regarding the accounting principles. As shown in the performance comparison between commercial banks and credit card companies in <Table 5-4>, credit card companies in Korea have very volatile features of business. For example, between 2002 and 2006, the BIS capital adequacy ratio of credit card companies swung from -5.5% in 2003 to 24.4% in 2006, whereas the ratio stays within the band of 11.2% and 13.0%. This number stems from the striking difference in delinquency ratio. The non-performing loan ratio, measured by the size of substandard loans divided by total assets under management of credit card companies have varied from a low of 4.0% in 2002 and a high of 11.0% in 2003. In the years 2002 and 2003, the bank counterparts mark 2.3% and 2.6%, respectively. Thus, the profitability of these two financial sectors is quite different from each other. The credit card companies lost over 20% of their entire assets in 2003 alone, but, as the credit card sector has been revitalized since 2005, the ROA has recovered back to a remarkable 6.9%.

Table 5-9 ●● Performance Comparison between CCCs and Banks in Korea

(Unit: %)

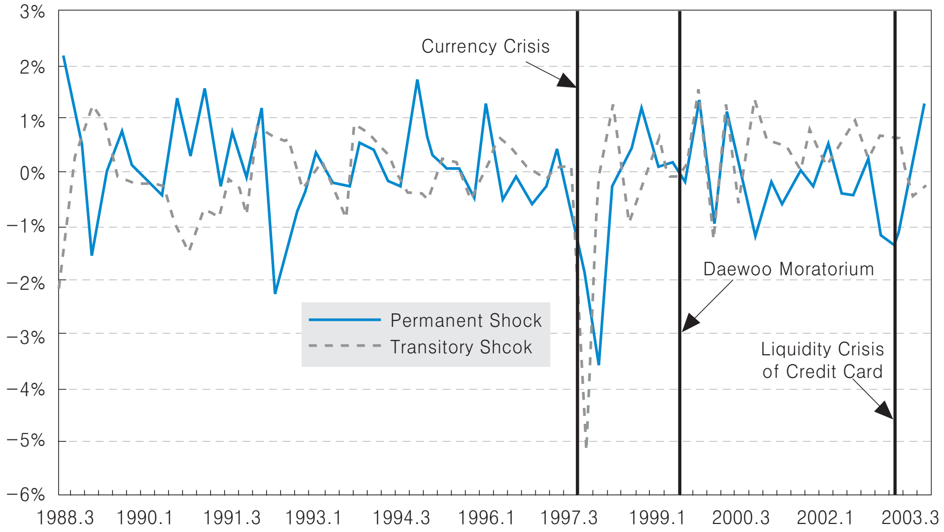
| Year | Credit Card Companies | | | Bank | | |
|---|---|---|---|---|---|---|
| | BIS Ratio | NPL Ratio | ROA | BIS Ratio | NPL Ratio | ROA |
| 2002 | 12.4 | 4.0 | 0.4 | 11.3 | 2.3 | 0.6 |
| 2003 | -5.5 | 11.0 | -20.3 | 11.2 | 2.6 | 0.2 |
| 2004 | 9.8 | 6.2 | -3.9 | 12.1 | 1.9 | 0.9 |
| 2005 | 19.0 | 9.7 | 1.2 | 13.0 | 1.2 | 1.3 |
| 2006 | 24.4 | 5.6 | 6.9 | 12.8 | 0.8 | 1.1 |
| Average | 12.03 | 7.30 | -3.13 | 12.06 | 1.78 | 0.80 |
| Standard Deviation | 11.33 | 2.93 | 10.32 | 0.82 | 0.75 | 0.43 |

In summary, the average BIS capital adequacy ratios of banks and CCCs are quite similar: 12.03% and 12.06%, respectively. But their volatilities are not at the same order of magnitude: standard deviation of BIS ratio of banks and CCCs are 7.52% and 0.74%. The delinquency ratio of assets of CCCs is very high and volatile relative to banks'. Hence, the overall profitability of CCCs is subject to a greater uncertainty.

Obviously, Korea's recent experiences reflect abnormal cases of the credit card business. But, Algeria, in the entry stage as an emerging market economy, where there are frequently extreme cases, could encounter similar occurrences, if appropriate regulations are not established.

Then, what is the implication of appropriate regulatory measures for credit card loans? In principle, the credit card business has little to do with systemic concerns. This is the reason why many countries like the United Kingdom do not regulate credit card business at financial regulators. In those countries credit card business is regulated in the spirit of conduct of business regulations. However, in practice, credit card business has much to do with systemic risks, especially in the regimes where commercial banks are greatly, either directly or indirectly, related to credit offered by credit card companies. Even in Korea where credit card companies are classified as credit specialized financial institutions which may not take deposits from anonymous individuals, the high delinquency of credit card loans influence adversely and seriously the financial universe through the funding channel: the Korean credit card companies may issue bonds up to ten times capital, most of which are underwritten by commercial banks and insurance companies. The size of crisis in 2003 was not really comparable to the 1997 financial crisis, but ranked as the fifth largest shock since the mid 1980s, as argued in Kang (2004).

Figure 5-5 ●● External Shock Identifications from 1988 to 2003




Algeria, where credit card business is run by commercial banks, is advised to set up distinct firewalls between credit card accounts and ordinary bank accounts in order to check systemic risks stemming from the credit card sector. Since credit card based lending tends to explode and plunge relative to an equilibrium level, or is unduly over-reactive to business conditions, this volatile movement may affect bank soundness. This wag-the-dog situation should be carefully taken into account when designing regulations for credit card businesses.

## 4.2. Conduct-of-business Regulations for Credit Card Companies

The volatile performance of the credit card business partly stems from fierce competition of credit card business runners to expand market shares. As a network industry, the credit card business enjoys the size and scope of economy. As more merchants and card holders get affiliated with a credit card company, it will be more likely to become a price setter. For this reason, the competition for markets is inevitable in this business.

Generally speaking, competition does more good than harm. It will raise consumers' gain and welfare by being offered cheaper price and larger opportunities. These welfare increasing benefits, however, end up being a failure once the competition is over or individuals' consumption behaviors are not rational. The credit card businesses in which a host of regulatory hurdles are imposed so as to deter free entrants at low costs are highly likely to be concentrated after a period of competition. Since overcompetition in the transition periods may generate favorable environments under which consumers overcome their existing liquidity constraints and, sometimes, solvency constraints, they are often tempted to push forward their consumption level to an extent which is beyond their capability.

However, this overconsumption may persist for a while when the credit card companies stage a battle for market share, for they give up short-term losses for the sake of long-term profitability. This generous credit era often ends when some of the credit card companies become distressed and cannot extend cheap credit to card holders. At that time, credit conditions get tightened in not only problematic credit card companies but also sound ones, thus leading to massive credit defaults. The credit card holders should have foreseen their appropriate amount of debt service capacity and controlled their consumption. The individuals' pinch on credit, which makes things worse, will lead to the financial soundness of leading credit card companies due to high delinquency ratio of loans. The credit card loans are highly correlated with each other and influenced by macro shocks. Then, the overall credit card industry will be in danger.

In summary, competition in the credit card business, which is a source of welfare gains, is also a risk factor when coupled with the characteristics of regulated businesses and individuals' irrational consumption behavior without full awareness of intertemporal budget constraints and rosy expectations.

How to cope with these market failures? Strengthening consumer protection measures is needed. Overly fierce competition among credit card companies taking advantage of consumers' boldness ultimately tends to hurt not only consumers' welfare but also endanger their own viability. The consumer protection measures which support consumers' rights but also weaken the incentives of credit card companies to mobilize members at a high cost, could effectively control the over-competition. For example, reasonable fees should be levied on maintenance of annual memberships. Cross-selling with other financial products should be prohibited unless the members give consent. Standardized contract form should be prepared in advance with clear legal clauses of judgment in favor of consumers in case of disputes.

In relation to consumer protection, sound practices on delinquent debt recovery should be established. Various acts that threaten, intimidate and harass credit card users in relation to debt collection should be carefully filtered out. Sound debt collection practices will help to not only protect the already distressed individual's welfare but also establish belief in the financial system in which the reconstruction is one of the most important tasks in the Algerian financial regime where the public trust was impaired after the failure of the Khalifa Bank.

## 4.3. Efficient Use of Credit Information and Privacy Protection

Credit information has two opposite features. On the one hand, its wide usage may contribute to facilitation of financial transactions, thus improving economic efficiency. However, this efficiency gain does not come for free. The cost is the sacrifice of privacy. As individuals get better offers and opportunities to receive credit, they have to offer their own confidential information so that the credit providers are able to assess the corresponding risks. Once the credit information is revealed, there exist possibilities that it will be circulated outside the financial institutions that originally acquired the information in return for credit. Then, the credit information may be used outside the purposes of credit. In the extreme case it can be exploited as a tool or motive of crimes. Therefore, it should be noted that there exists a trade-off relationship between efficiency gain and failures in privacy protection when more credit information is available for credit.

Under these circumstances, it is necessary to establish a fair balance between efficient use of credit information and privacy protection. This balance should be determined by high level decision makers with clear economic and legal objectives. As a matter of fact, guidelines for the scope of information sharing are not the arena of financial regulators. The ministry of finance and the Bank of Algeria are just parts of the government administration under the president. They may administer and regulations broadly set by the national assembly. The rightness of execution of laws is also judged by the courts. In this structure, it is necessary to reach a consensus which outlines the scope of information sharing. During the discussion, it is obvious that the financial regulatory authorities propose ideas, rationale and analyses about the information usage and measures that may sooth the deleterious side-effects. But, the ultimate decision about the information sharing should be endorsed by the representatives of the people and reviewed by the legal officers.

Another important policy in relation to information accumulation is the government initiatives to collect relevant data. It is ideal to find data that does not infringe on consumers' privacy but help identify creditworthiness of borrowers. But this task is not an easy task in view of Algerian circumstances where information gathering is at its infant stage. Thus, it is recommended to assemble a discussion panel among policymakers and practitioners to identify useful data fields. The members exchange ideas and prepare necessary legal measures to acquire the information once identified. This task should be launched by the ministry of finance which can attract active participation of the central bank, SATIM, commercial banks, non-bank financial companies like lease companies, wholesale and retail vendors, etc.

## 4.4. Proposed Schedule

The Algerian credit card industry is anticipated to evolve from a debit card to a credit card, by way of a charge card. As such, regulation on credit card business should be in tandem with the development stages.

From the view point of credit risk, the degree of risk exposure declines from credit cards to debit cards. As a matter of fact, debit cards merely transact intermediations by just replacing cash so that it does not bring about negligible amount of credit risk. In this sense, Algeria does not need prudential regulations on credit card suppliers. Rather, it is necessary to build up appropriate conduct of business regulations, of which the absence would infringe on consumer interests and welfare due to mistaken transactions, excessive issuance of debit cards toward non-eligible consumers, etc. Due to existence of costs involved in using the network and tax base revelation, merchants would prefer cash transactions to card based ones without appropriate measures. These adverse results may hamper not only the successful introduction of credit card practices but also ultimately the consumers' confidence in the financial system.

As more and more charge and credit cards are used, the card suppliers tend to be at higher credit risk. At this point, it is imperative to impose prudential regulations on them. The statistical nature of credit risk should be based on the regulations in order to rule out the failure of credit card companies or banks and systemic risks. The various measures instituted in Korea can be referred to at this stage.

Before conducting business and instituting prudential regulations, immediate interest goes to the arena of the scope of usage of credit information. The right balance between economic efficiency and privacy protection should be obtained from national consensus and/or highest policymakers' decision. Then, following the agreement, the laws on credit information should be enacted and relevant data collected. In fact, the regulation on credit information should be carried out separately away from the establishment of credit card markets, which is the core part of financial market development in general.

In summary, this paper recommends that the regulations for credit information should be discussed and enacted immediately. And then the conduct of business regulations on the card suppliers should be introduced and developed along with the evolution of types and coverage of credit cards. When charge cards and credit cards are on the verge of being used, the financial authorities should put prudential regulations into effect with the prior analyses on the nature of credit risks in Algeria. Though the implementation of the three regulations is introduced over time, the preparation should be done immediately.

## 5. Conclusion

Successful transition from a planned economy to a market one has made Algeria once again emerge as a leader of Maghreb countries. Favorable external environments are accelerating this trend forward. Internal structural reforms in various areas such as the financial system will warrant the strong position of Algeria in the near future. The successful introduction of credit culture will be a legitimate tool for Algeria to achieve this goal.

As shown in Korea's experiences, mature credit card culture cannot be obtained for free. But, depending on the preparations and considerations within the policy circle, the cost could be greatly reduced. Private markets are often too bold with ignorance and sometimes too conservative and subject to unexpectedly large shocks. Though all shocks are anticipated well in advance, the commonalities in financial business and human risk taking and risk averse behaviors may lead the way to systematically manage related credit risks born in the transactions. The methods could be referred to by looking into a good reference point.

In this sense, the Korean experiences in the course of credit card industry development could provide much insight for the Algerian financial regulators. Presumably, enormous risks around this business could be contained only with sound financial regulations, good information infrastructure and scientific management skills. To some extent, trial and error will be inevitable in Algeria. First of all, go for the business, but only with the awareness of the risks and reacting measures, before it's too late.

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Table 5-A-1 ●● Algeria: Summary Balance Sheet of the Bank of Algeria, 2001-2005

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| | (In billions of dinars) | | | | |
| Net foreign assets | 1,313.6 | 1,742.70 | 2,325.90 | 3,109.1 | 4,151.5 |
| Net domestic assets | -535.8 | -896.1 | -1,173.7 | -1,949.0 | -2,988.2 |
| Credit to government | -276.3 | -304.8 | -464.1 | -915.8 | -1,986.5 |
| Credit to banks | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other credit | 0.7 | 0.8 | 0.7 | 0.6 | 0.8 |
| Other items net | -260.2 | -592.1 | -710.3 | -1,033.8 | -1,002.5 |
| Reserve money | 777.8 | 846.6 | 1,152.3 | 1,160.1 | 1,163.3 |
| Currency in circulation | 584.5 | 673.7 | 787.7 | 882.5 | 930.3 |
| Bankers deposits[1] | 193.3 | 172.9 | 364.6 | 277.6 | 233.1 |
| | (Annual change; in billion of dinars) | | | | |
| Net foreign assets | 539.3 | 429.1 | 583.2 | 783.2 | 1,042.4 |
| Net domestic assets | -311.7 | -360.3 | -277.6 | -775.3 | -1,039.2 |
| Credit to government | -119.9 | -28.5 | -159.3 | -451.7 | -1,070.7 |
| Credit to banks | -170.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other credit | 0.0 | 0.1 | -0.1 | -0.1 | 0.2 |
| Other items net | -21.3 | -331.9 | -118.2 | -323.5 | 31.3 |
| Reserve money | 227.6 | 68.8 | 305.7 | 7.8 | 3.2 |
| Currency in circulation | 93.0 | 89.2 | 114 | 94.8 | 47.8 |
| Bankers deposits[1] | 134.6 | -20.4 | 191.7 | -87 | -44.5 |
| | (Annual percentage change) | | | | |
| Net foreign assets | 69.7 | 32.7 | 33.5 | 33.7 | 33.5 |
| Net domestic assets | 139.1 | 67.2 | 31.0 | 66.1 | 53.3 |
| Credit to government | 76.7 | 10.3 | 52.3 | 97.3 | 116.9 |
| Credit to banks | -100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Reserve money | 41.4 | 8.8 | 36.1 | 0.7 | 0.3 |
| Currency in circulation | 18.9 | 15.3 | 16.9 | 12 | 5.4 |
| Bankers deposits[1] | 229.3 | -10.6 | 110.9 | -23.9 | -16 |

Source: Bank of Algeria; IMF (2007b).
Note: 1. Includes deposits of nonbank financial institutions.

Table 5-A-2 ●● Algeria: Summary Balance Sheet of Deposit Money Banks, 2001-2005

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| | (In billions of dinars) | | | | |
| Net foreign assets | -2.8 | 13.0 | 16.7 | 10.1 | 27.9 |
| Assets | 32.4 | 49.7 | 55.5 | 76.6 | 91.6 |
| Liabilities | 35.2 | 36.7 | 38.8 | 66.5 | 63.6 |
| Net domestic assets | 1,794.5 | 2,114.4 | 2,426.2 | 2,695.3 | 2,916.6 |
| Domestic credit | 1,817.3 | 2,040.0 | 2,136.9 | 2,271.3 | 2,543.3 |
| Credit to government | 739.6 | 774.0 | 757.4 | 736.9 | 765.9 |
| *Of which*: Treasury securities | 713.3 | 725.4 | 720.0 | 700.5 | 728.1 |
| Credit to the economy | 1,077.7 | 1,266.0 | 1,379.5 | 1,534.4 | 1,777.4 |
| *Of which*: private sector | 337.2 | 550.2 | 587.8 | 674.7 | 881.6 |
| Claims on central bank | 191.6 | 324.5 | 617.4 | 672.5 | 684.8 |
| Central bank deposit auction | 0.0 | 129.7 | 250.0 | 400.0 | 499.8 |
| Other deposits | 191.6 | 194.8 | 367.4 | 272.5 | 185.1 |
| *Of which*: required reserves | 75.9 | 89.3 | 126.7 | 157.3 | 171.5 |
| Cash in vault | 7.3 | 9.0 | 6.3 | 8.1 | 9.2 |
| Other items (net) | -223.5 | -259.2 | -328.1 | -257.2 | -368.0 |
| *Of which*: MLT foreign liabilities | -24.5 | -36.6 | -41.9 | -49.6 | -20.6 |
| Domestic liabilities | | | | | |
| Demand deposits | 554.9 | 642.2 | 718.9 | 1,127.9 | 1,220.4 |
| Time deposits | 1,236.7 | 1,485.2 | 1,724.0 | 1,577.5 | 1,724.2 |
| *Of which*: foreign currency deposits | 154.4 | 168.8 | 170.8 | 201.6 | 231.6 |
| Central bank refinancing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | (Annual chage; in billions of dinars) | | | | |
| Net foreign assets | -4.5 | 15.8 | 3.8 | -6.6 | 17.8 |
| Net domestic assets | 181.1 | 319.9 | 311.8 | 269.0 | 221.3 |
| Credit to government | 1.8 | 34.4 | -16.6 | -20.5 | 29.0 |
| Credit to the economy | 84.6 | 188.3 | 113.4 | 154.9 | 243.1 |
| Claims on central bank | 135.6 | 132.9 | 292.9 | 55.0 | 12.4 |
| Other | -40.1 | -34.0 | -71.6 | 72.7 | -109.7 |
| Domestic liabilities | 176.6 | 335.7 | 315.6 | 262.4 | 239.2 |
| | (Annual percentage change) | | | | |
| Foreign assets | 14.3 | 53.5 | 11.8 | 38 | 19.5 |
| Foreign liabilities | 31.9 | 4.3 | 5.7 | 71.5 | -4.3 |
| Net domestic assets | 11.2 | 17.8 | 14.7 | 11.1 | 8.2 |
| Credit to government | 0.3 | 4.7 | -2.1 | -2.7 | 3.9 |
| Credit to the economy | 8.5 | 17.5 | 9.0 | 11.2 | 15.8 |
| Claims on central bank | 241.9 | 69.4 | 90.2 | 8.9 | 1.8 |
| Other | 22.8 | 15.7 | 28.6 | -22.6 | 44.1 |
| Domestic liabilities | 10.9 | 18.7 | 14.8 | 10.7 | 8.8 |

source: Bank of Algeria; IMF (2007b).

Table 5-A-3 ●● Algeria: Structure of Interest Rates, 2001-2005

(In percent per annum)

| | December | | | | |
|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005 |
| Central bank deposit auction [1] | ... | 2.75 | 1.75 | 0.75 | 1.68 |
| Central bank rediscount | 6.0 | 5.5 | 4.5 | 4.0 | 4.0 |
| Central bank overdraft | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Money market | | | | | |
| Repurchase agreements | ... | ... | ... | ... | ... |
| Central bank credit auction | ... | ... | ... | ... | ... |
| Commercial banks' deposit rates [2] | 5.506.75 | 4.505.75 | 4.505.75 | 2.253.25 | 1.252.50 |
| Commercial banks' lending rates | 8.011.0 | 8.009.75 | 8.009.00 | 6.009.00 | 5.509.00 |
| CNEP (savings and housing bank) | | | | | |
| Deposit rates | | | | | |
| Savings accounts [2] | 5.06.0 | 5.06.0 | 3.54.5 | 2.55.0 | 2.05.0 |
| Housing accounts [2] | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| Lending rates (housing) | | | | | |
| Individuals | 8.009.75 | 7.58.0 | 6.507.75 | 6.507.75 | 5.757.50 |
| Developers | 8.0 | 7.5 | 6.5 | 6.5 | 6.0 |
| Treasury securities [2 3] | | | | | |
| 13 weeks | 5.30 | 1.65 | 1.05 | 0.40 | 0.41 |
| 26 weeks | 5.69 | 1.80 | 1.25 | 0.60 | 0.62 |
| 2 years | 5.98 | 3.59 | 2.52 | 1.48 | 2.95 |
| 5 years | 6.00 | 3.96 | 2.89 | 2.08 | 4.00 |
| 7 years | ... | ... | ... | 2.99 | 4.00 |
| 10 years | 6.05 | 7.00 | 5.17 | 3.50 | 4.50 |
| Memorandum item: Consumer price index (average percentage change) | 4.2 | 1.4 | 2.6 | 3.6 | 1.6 |

Source: Algerian authorities; IMF (2007b).

Note: 1. One-week tender rate for 2002-04; weighted average of one- and three-month tender rates thereafter.
2. Taxation of fixed-income instruments is described in the summary of the tax system.
3. Interest rate or yield on last primary issuance of year.

# Chapter 6

# Tax and Non-Tax Measures for Enhancing the Usage of Credit Cards as a Means of Transactions

# Summary

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The purpose of this chapter is to introduce the recent Korean experience in promoting the usage of payment cards. Since 1999, a package of programs for payment card transactions, which targeted cardholders, member merchants and payment card companies jointly or separately, has been implemented to enhance the transparency of transaction channels, to guarantee fairness in taxation and to enlarge tax bases.

The package includes various policy measures (both tax and non-tax) such as tax deductions, mandatory acceptance of payment cards, and guidelines for lower card transactions fees. Specifically, cardholders and member merchants are allowed to deduct a certain fraction of payment card transactions from their tax base. Meanwhile, merchants in certain business areas and/or beyond a certain level of sales revenue are required to accept payment cards as a means of payment. In addition, payment card companies are guided to lower the transaction fees for member merchants dealing with railroad tickets, books, and medical services.

Based on 2006 statistics, we may say that the use of payment cards in Algeria is in its infancy. The average number of payment cards per person was 0.04 in 2006 which is a relatively small number compared to Algeria's GDP per capita (around US$ 3000). A systematic problem in relation with to the information system inside each bank is the main barrier to the diffusion of payment cards in Algeria. Except l'Algerie Poste, all public banks such as BEA, BDL, BADR and CPA are not able to process their transactions in real time due to the lack of information system between their central server and that of the branches. The current batch information system hinders the diffusion of payment cards as it raises the level of risk related to transactions. Therefore, banks are required to prepare a series of security steps such as a withdrawal ceiling. This kind of measure consequently increases transaction related costs to consumers, which discourage them from frequently using payment cards. The lack of real time information actually creates a vicious circle for the diffusion of payment cards. The relatively underdeveloped usages of payment cards reflect this fact. However, recent efforts by banks such as BEA and BADR to modernize their information systems provide hope. The faster their information system upgrade becomes, the wider the diffusion of payment cards will become.

Apart from questions related to the information system, we would like to recommend three

policy measures that could foster the usage of payment cards in Algeria.

First, it is crucial for the success of payment card diffusion to create minimum demand. The current situation of payment cards in Algeria is a sort of chicken and egg problem. As the usage volume of payment cards is small, not many merchants are attracted to equip themselves with card terminals. As the number of merchants equipped with terminals is small, not many consumers are interested in using payment cards. To solve this problem, it is absolutely necessary to create critical mass of demand as well as to secure a critical number of merchants accepting payment cards. As the proportion of the public sector in Algeria is relatively high, it would be effective to encourage government and public enterprises to use payment cards for their expenses. It will create a critical mass of demand that may attract merchants to accommodate only the card-payment customers.

Second, a critical mass of demand created by pushing the public sector can attract merchants who are interested in accommodating public sector spending by payment cards. But the level of interest may vary from one industry to another depending on two dimensions: purchase frequency and amount. It would be necessary to have a step-wise approach for merchants to equip themselves with card terminals. Merchants in business categories in which purchase frequency is high and the average purchase amount is low tend to accept debit cards first. Once the credit card is introduced, it will be worthwhile to offer incentives to business categories having low purchase frequency but high purchase amounts.

Finally, in the early stage of the card payment system, individual consumers and merchants tend to be reluctant to use payment cards due to uncertainty. From a transaction security point of view, both share the same type of uncertainly related to system failure such as fraud and system malfunction as well as fiscal policy. To reduce the uncertainty related to malfunction, the key is to build a reliable banking information system which secures the whole process of card payment from the moment of purchase, its confirmation to the merchant and the consumer as well as bank transfer of the paid amount. As for the fiscal policy, consumers may raise questions about the ongoing nature of tax benefits. Once a type of tax benefit is introduced, its minimum level should be guaranteed over an acceptably long period. As for merchants, to compensate for the increase of corporate tax due to the enlarged usage of payment cards which increases the transparency of transactions, it would be necessary to envisage advantageous corporate tax rates for merchants who comply with the governmental policy. As well, a long term road map for fiscal policy should be communicated in advance to reduce the uncertainty among merchants.

## 1. Background

The purpose of this chapter is to introduce the recent Korean experience in promoting the usage of payment cards. Since 1999, a package of programs for payment card transactions, which targeted card holders, member merchants and payment card companies jointly or separately, has been implemented to enhance the transparency of transaction channels, to guarantee fairness in taxation and to enlarge tax bases.

The package includes various policy measures (both tax and non-tax) such as tax deductions, mandatory acceptance of payment cards, and guidelines for lower card transactions fees. Specifically, cardholders and member merchants are allowed to deduct a certain fraction of payment card transactions from their tax base. Meanwhile, merchants in certain business areas and/or beyond a certain level of sales revenue are required to accept payment cards as a means of payment. In addition, payment card companies are guided to lower transaction fees for member merchants dealing with railroad tickets, books, and medical services.

The immediate goals of this research are to introduce the programs for enhancing the payment card transactions adopted by the Korean government in recent years and evaluate their effectiveness. However, the scope of research is eventually extended to understanding the Algerian economy as well as its government system and tailoring those programs to the Algerian context.

The contents of the paper are construed as follows. In section 2, the policy measures for enhancing payment card transactions are introduced. In section 3, their performance is evaluated in terms of growth rates in VAT, transaction volume, and numbers of card holders and member merchants. A list of recommendations designed for the Algerian economy such as the proliferation of corporate card usage in the public sector, the industry sector-wide installation of card terminals, as well as building trust in policy measures among individuals and merchants will be presented in section 4.

## 2. Policy Measures in South Korea

This section explores the policy measures taken since 1999 for the purpose of enhancing transactions through payment cards. They can be categorized into three types based on the target group: cardholders, member merchants[1], and card companies. In turn, the group-specific programs are classified into subgroups by tax and non-tax measures.

### 2.1. Cardholders (individuals and corporate entities)

#### 2.1.1. Tax incentives

From September 1, 1999, consumers started to receive the deductions in income tax based on the sum of transactions paid by cards (debit, charge, and credit cards) for the purchase of goods and services. The extent of income tax deduction was 10% of the amount if it surpasses 10% of annual income. The total deduction amount had a ceiling of the lower amount between US$ 3,000 (KW 3 million)[2] and 10% of annual labor income. The sum could be enlarged to include the usage of the spouse as well as that of other direct household members. The deduction rate was augmented to 20% as well as the annual ceiling to US$ 5,000 in 2001. For example, if a salary man having an income of US$ 40,000 pays US$ 10,000 by card, his income tax base can be reduced by US$ 2,000 (20% of US$ 10,000). If his payment by card increases to $25,000, his tax base is reduced by US$ 4,000 limited by the 10% ceiling of total income. In 2006, the card deduction amount was 2.8% of the tax base and 6.9% of the amount of total deduction. 37.2% of income tax payers received this benefit. The income tax deduction program was extended to cash transactions in 2005 after the introduction of a pre-registered cash card system which made merchants report transactions to the tax authority even in the case of payment by cash. As of 2006, 1,144,193 merchants equipped themselves with terminals for the cash card system with a registration rate of 76.4% among appointed merchants.

On the other hand, corporate entities are required to submit payment card receipts or their equivalents for all entertainment expenses[3] exceeding US$ 50 and regular expenses exceeding US$ 100. Otherwise, the amounts will not be deducted from the corporate revenue account and be liable for corporate tax. In line with tax incentives given to private entities, public sector

1 _ For brevity, a merchant, who accepts payment cards as a means of payment, is called a member merchant; otherwise, a non-member.
2 _ The exchange rate of US$ 1 to KW 1000 is applied hereafter in this chapter.
3 _ In South Korea, all types of entertainment expenses to service clients, e.g., restaurant, events, etc. were deducted for corporate tax. After the implementation of this tax policy, only card-paid entertainment expenses became deductible.

officials are also enforced to provide a certificate of expenditure in the form of payment card receipts (April 1999).

### 2.1.2. Non-Tax incentives

A Credit Receipt Lottery program was initiated in January 2000. A lottery number is assigned to each payment card receipt. By purchasing goods and services through payment cards, consumers are automatically enrolled in the lottery. Every month, a total of US$ 16 million in prize money is given to randomly chosen payment card receipt holders. In addition, member merchants, from whom the winning numbers were issued, were also rewarded. Thus, the payment card lottery program not only benefitted cardholders but also member merchants.

Table 6-1 ●● Payment Card Receipt Lottery Prize Money by Ranking

(unit: person, US$)

| Ranking | Cardholders | | | Member Merchants | | |
|---|---|---|---|---|---|---|
| | Amount | Winner | Total | Amount | Winner | Total |
| 1 | 100,000 | 1 | 100,000 | 20,000 | 1 | 20,000 |
| 2 | 30,000 | 2 | 60,000 | 5,000 | 2 | 10,000 |
| 3 | 10,000 | 5 | 50,000 | 1,000 | 5 | 5,000 |
| 4 | 5,000 | 10 | 50,000 | 500 | 10 | 5,000 |
| 5 | 100 | 2,500 | 250,000 | 100 | 700 | 70,000 |
| 6 | 10 | 109,000 | 1,090,000 | - | - | - |
| sum | - | 111,518 | 1,600,000 | - | 718 | 110,000 |

source: The Ministry of Finance and Industry (MOFE)

## 2.2. Merchants

### 2.2.1. Tax Incentives

Merchants who accept payment cards as means of payment get tax incentives in two channels: Value Added Tax (VAT) and income tax.

First, member merchants can reduce VAT by the following amount[4]:

4 _ In 2000, both deduction limit as well as deduction rate were raised.

- VAT reduction = min[A,B]
- A = (Sum of sales made by payment cards)*1%, if total sales revenue is smaller than US$ 500,000.
- B = 50%*(VAT originally levied)*(Sales generated by payment cards in the corresponding year minus sales in the previous year)/(total sales in the corresponding year)

Table 6-2 ●● Deduction Limit and Rate of VAT in year 1999 and 2000

| | 1999 | 2000 |
|---|---|---|
| Merchants | Small business to sale less than US$ 500,000 in the previous year | All of small business |
| Deduction rate | 1% of sales made by payment cards | 2% of sales made by payment cards |
| Deduction limit | US$ 3,000 per year | US$ 5,000 per year |

source: MOFE

Second, member merchants can also claim income tax reduction as payment cardholders can. The level of income tax deduction is determined by the following formula:

- Income tax reduction = 50%*(Income tax originally levied)*(Sales made by payment cards in the corresponding year minus sales in the previous year)/(total sales in the corresponding year)

### 2.2.2. Non-Tax Incentives

For business owners of certain areas and size, it is almost mandatory to accept payment cards as a means of payment. Many retailers, restaurants, hotels, motels and hospitals are guided to accept payment cards; otherwise, they would be more likely to be singled out for tax-auditing by the National Tax Service (NTS). Though it is not explicitly stipulated by law, the acceptance of payment cards is technically enforced on vendors of a certain size. To encourage small business owners to accept card payment, the ministry of finance and economy (MOFE) has organized waves of campaign regularly since 1999 by grouping them in terms of sales size. First, MOFE pushed relatively large merchants and then smaller ones.

Table 6-3 ●● Mandatory Acceptance Standard of Payment Cards (1999)

| | Business Areas | By Size | |
|---|---|---|---|
| | | First Group | Second Group |
| Small Business | Restaurants, hotels, motels and services | over than US$ 150,000 in the previous year | over than US$ 48,000 in the previous year |
| | Professionals (lawyers, medical doctors, CPAs, and mechanics) | | over than US$ 48,000 in the previous year |
| | Retailers | over than US$ 150,000 in the previous year | over than US$120,000 in the previous year |
| | Hospitals and educational institutes | over than US$ 150,000 in the previous year | over than US$ 60,000 in the previous year |
| Corporate | All | All | All |

source: MOFE

Table 6-4 ●● Registration Results for Small Businesses (1999 and 2001)

**1999 2nd Half**

| Type | Total | Retail | Restaurant, Hotel | Hospital | Private education | Professional service* | Others |
|---|---|---|---|---|---|---|---|
| Appointed | 43396 | 16339 | 7670 | 3611 | 1919 | 7561 | 6296 |
| Registered | 17300 | 4494 | 4583 | 3304 | 712 | 2192 | 2015 |
| Ratio | 40% | 28% | 60% | 91% | 37% | 29% | 32% |

* lawyer, accountant

**2001**

| Type | Total | Retail | Restaurant, Hotel | Hospital | Private education | Professional service* | Others |
|---|---|---|---|---|---|---|---|
| Appointed | 184740 | 88092 | 25693 | 27417 | 5768 | 12020 | 1803 |
| Registered | 140392 | 63219 | 21961 | 26663 | 4191 | 9626 | 1022 |
| Ratio | 76% | 72% | 85% | 97% | 73% | 80% | 57% |

source: MOFE

As of 2006, NTS forces individual business owners with annual sales over US$ 150,000 to accept payment cards. Once a complaint is filed that a customer is refused payment with a payment card by a merchant, NTS begins tax auditing the merchant.

When detecting tax evasion from examining annual tax reports, NTS will levy taxes originally due plus punitive damages on the audited merchant. Furthermore, all the accounting records from the merchant will be scrutinized carefully by regional NTS officials in the future.

Currently, it is roughly estimated that small business owners in Korea report 30%~50% of revenue for tax purposes. As for member merchants, the rising proportion of payment card transactions implies that even though involuntarily they have to raise the figures in tax reports accordingly. All the while, non-member merchants will start to accept payment cards. Otherwise, they will draw the attention of the NTS.

## 2.3. Payment Card Companies

In order to alleviate the incidence of transaction fees on vendors, the payment card service providers are guided to lower their charges on card transactions. The Korean government concentrated its efforts on reducing card transaction fees on about thirty business areas, such as medical services (Table 6-5), book sales, railway transportation, and scientific apparatus. These areas all closely affect public wellbeing or create positive externality.

In addition, the Korean government persuaded payment card companies to apply lower transaction fees in proportion to transaction volume made by payment cards. Such a sliding system of payment card transaction fees could provide additional incentive to expand card transactions for large member merchants, whose deduction limits for VAT and income taxation are already met.

Table 6-5 ●● Payment Card Transaction Fees for Medical Service Providers

| | Before | After | Reduction rate |
|---|---|---|---|
| Hospital | 1.5% | 1.5% | - |
| Medical Clinique | 3.0% | 2.5% | 17% |
| Others | 3.5% | 3.0% | 14% |

source: MOFE

According to <Table 6-6>, card transaction fees charged to member merchants, recorded at 2.9% in the latter half of year 2000, dropped to 2.5% in June 2001. However, in the same period, the interest rate for installment payments and cash advances fell by a substantial margin, which indicates that the lowered card transaction fee was not wholly induced by the government guideline and rather partly induced by voluntary competition among payment card companies to attract more cardholders under the recent low interest rate regime.

Table 6-6 ●● Interest Rates and Fees Charged by Payment Card Providers

| Classification | | Dec. 1998 | Dec. 1999 | Dec. 2000 | Jun. 2001 |
|---|---|---|---|---|---|
| Funding Rate | | 13.9 | 10.2 | 9.1 | 8.3 |
| Charges to cardholders | Cash Service | 24~30 | 24 ~29 | 24~29 | 15 ~26 (23.34) |
| | Installments | 18~19 | 17 ~19 | 17 ~19 | 11 ~17 (13.8) |
| | Card Loan | 18 ~22 | 10 ~21 | 9 ~19 | 9 ~19 (16.82) |
| | Late Penalty | - | - | 27 ~29 | 24 ~29 |
| Member fee (charges to member merchants) | | 2.9 | 2.9 | 2.9 | 2.5 |
| Bank rate for new consumer loans ** | | 12.93 | 10.08 | 9.48 | 8.57 |

source: MOFE

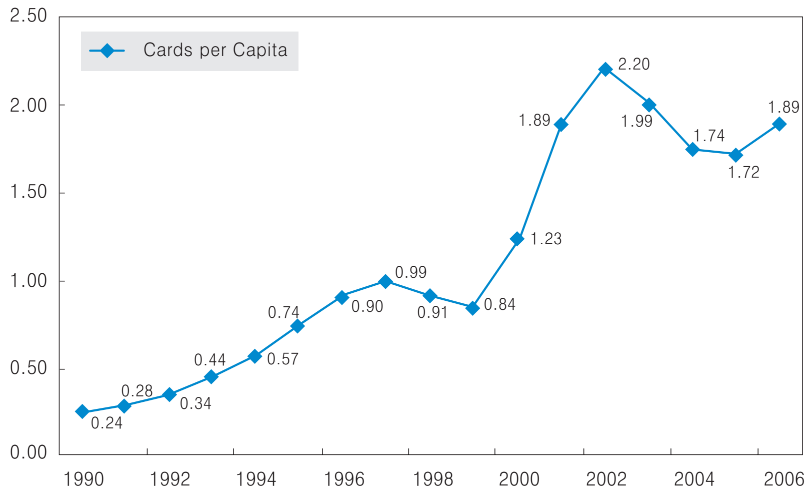
## 3. Performance Evaluation

This section analyzes the effects of the above programs and evaluates how successfully they increase the usage of payment cards.

### 3.1. Penetration of Payment Cards

The number of payment cards issued was only 24% of the total population in 1990 when GDP per capita was US$ 5,866. The number of card issued per capita almost reached 1.00 in 1997. Due to the Asian financial crisis, it plunged to .84 but climbed from 1999 thanks to waves of governmental policy measures encouraging the usage of payment cards. It stabilized around 1.90 after having recorded a peak of 2.20 in 2002.

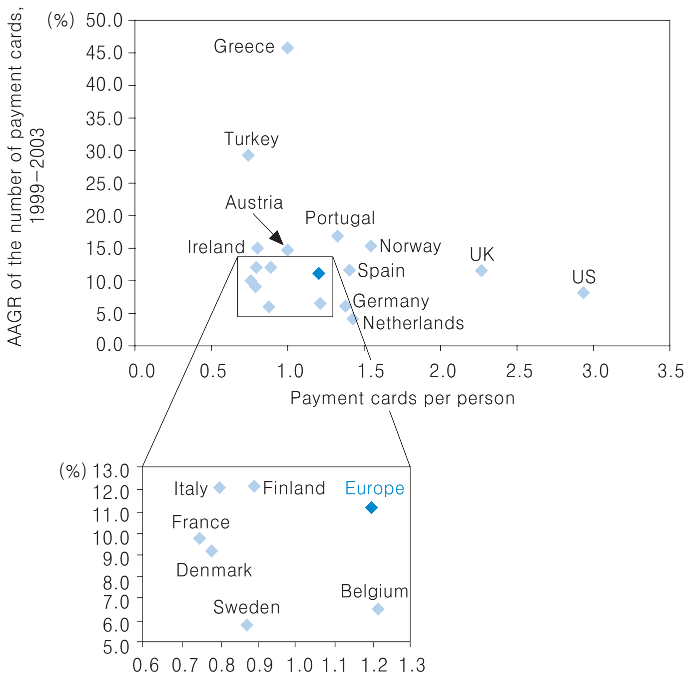
Figure 6-1 ●● Number of Payment Cards per Person




Source: Credit Finance Association (CREFIA)

Compared to European countries and the U.S., South Korea recorded high speed growth in terms of adopting payment cards despite its short history. In most European countries, the average number of cards per person was around 1.20 in 2003 when that of South Korea was 1.99 and its average annual growth rate (AAGR) was 48.1% higher than that of Greece which recorded the highest AAGR in Europe. Only in the U.K. and the U.S. was the average number of cards was higher than 2 in 2003.

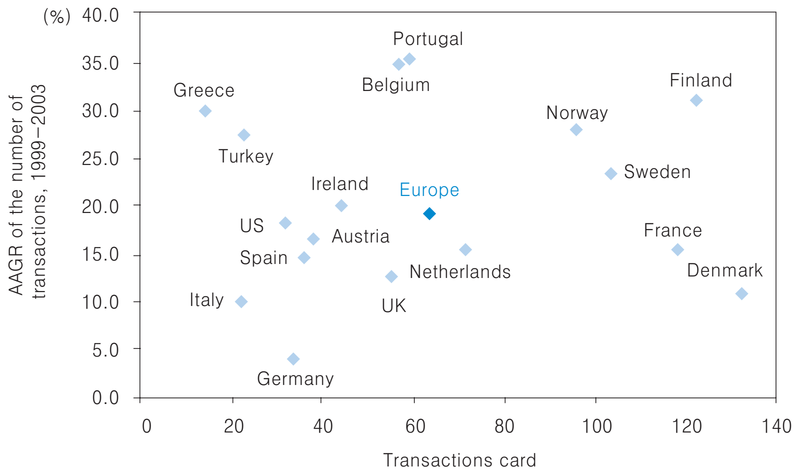
Figure 6-2 ●● Number of Payment Cards per Person and Average Annual Growth Rate in Europe and U.S.




Source: Business Insights Ltd.

The adoption of payment cards by South Koreans was not only fast in terms of the average cards per person but also dynamic in terms of the annual transactions per card. In 2003, the average in Europe was around 64 and that of U.S. was around 30 compared to 97 in South Korea (in 2002).

Figure 6-3 ●● Number of Transactions per Card in Europe and U.S.




Source: Business Insights Ltd.

As for the average amount per transaction, that of South Korean was around EUR 82 in 2002 which was higher than the European average (EUR 75).

Table 6-7 ●● Average Transaction Amount in Europe

| EUR | 1999 | 2003 |
|---|---|---|
| Turkey | 46 | 42 |
| Portugal | 44 | 47 |
| Denmark | 47 | 48 |
| Finland | 51 | 50 |
| France | 58 | 53 |
| Belgium | 84 | 62 |
| Sweden | 74 | 65 |
| Netherlands | 60 | 69 |
| Norway | 83 | 69 |
| Spain | 69 | 70 |
| Ireland | 72 | 78 |
| UK | 78 | 83 |
| Austria | 103 | 86 |

| | | |
|---|---|---|
| Germany | 119 | 120 |
| Greece | 148 | 135 |
| Italy | 182 | 209 |

Source: Business Insights Ltd.

## 3.2. Transaction Volume via Payment Cards

Payment card transactions grew five times from US$ 43 billion in 1999 to 215 billion in 2006 that amounts to 47.3% of private consumption. However, it is equally notable that negative signs of growth in 2003-2004 are attributed to a boom-bust cycle.

Table 6-8 ●● Aggregate Income, Private Consumption and Payment Card Transactions

(US$ billion)

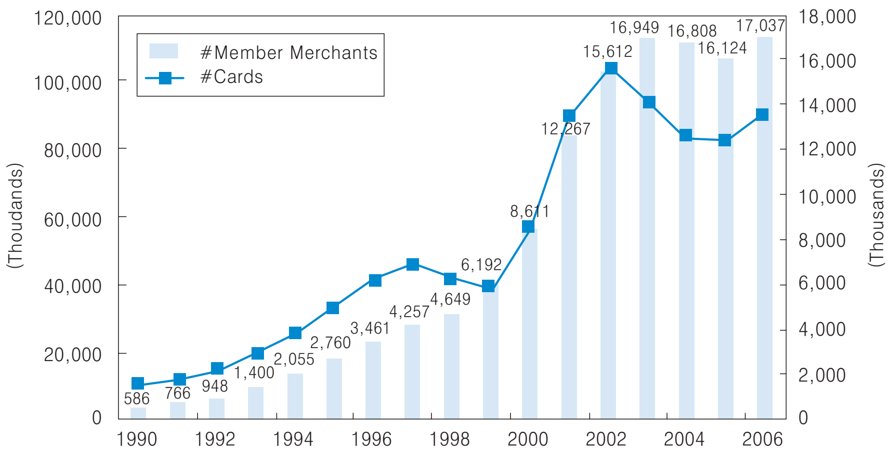
| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|
| GNI* | 523.4 | 576.2 | 621.0 | 685.1 | 725.4 | 781.7 | 805.9 | 847.9 |
| NDI** | 446.6 | 493.4 | 532.4 | 592.0 | 623.1 | 672.8 | 692.6 | 726.9 |
| Private consumption(A) | 274.9 | 312.3 | 343.4 | 381.1 | 388.2 | 401.5 | 424.6 | 453.9 |
| Total payment card amount (B)*** (growth rate) | 42.6 (38.3) | 77.9 (82.7) | 134.2 (72.4) | 174.1 (29.7) | 170.5 (-2.0) | 167.1 (-2.0) | 190.5 (14.0) | 214.8 (12.8) |
| B/A | 15.5 | 24.9 | 39.1 | 45.7 | 43.9 | 41.7 | 44.8 | 47.3 |

* Gross National Income
** National Disposable Income
*** Total card transaction amount after removing that of cash advance and corporate purchase cards
Source: The Bank of Korea (BOK) and CREFIA

## 3.3. Increasing Member Merchants

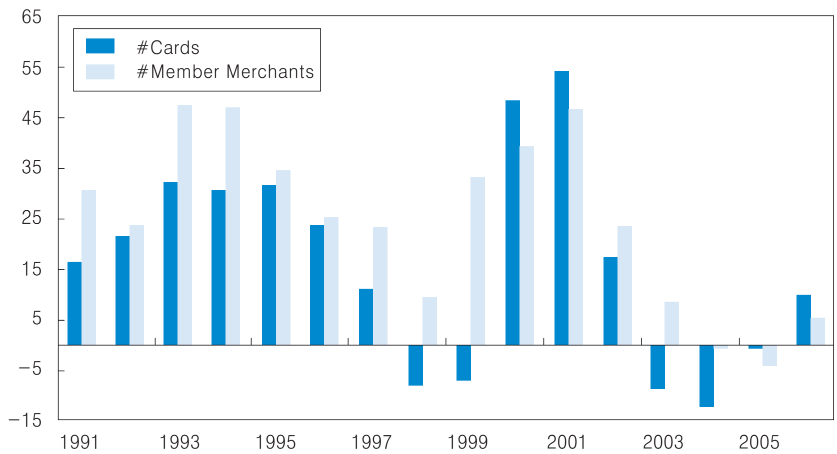
The number of vendors accepting payment cards increased. The increasing trend began in 1998 (a year after the Asian financial crisis and a year before the introduction of the programs for promoting the usage of payment cards), and it can be interpreted to reflect the small business openings by the unemployed after the currency crisis. However, the so-called Asian financial crisis story is not satisfactory to explain the number of member merchants continuing to grow even after unemployment stopped rising. This part partially justifies our claim that the payment card policies in South Korea since 1999 were successful in extending the scope of business in which payment cards are accepted as the means of payment. Furthermore, it is generally accepted that the under-reporting tendency of certain occupational groups (e.g., lawyers and medical doctors) has been diminished, as they are forced to take payment cards for payment[5].

Figure 6-4 ●● Number of Payment Cards and Member Merchants




source: CREFIA

Figure 6-5 ●● Growth Rate of Payment Cards and Member Merchants



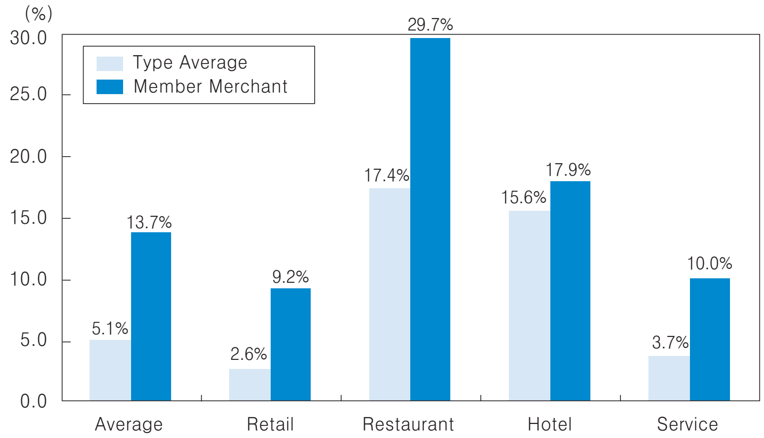

source: CREFIA

5 _ Otherwise, they will be more likely to be scrutinized by the National Tax Service.

## 3.4. Rapid Sales Growth of Member Merchants

Vendors accepting payment cards tend to show higher growth in sales and VAT compared with those not accepting payment cards in the same business area. This phenomenon indicates that the higher propensity to make transactions by payment cards simultaneously raised people's preference for member merchants over non-members.

Figure 6-6 ●● Contributions of Payment Card Transactions in Retail Business to Extending the Tax Basis of VAT (Q 1st, 2001)




source: MOFE

Accordingly, non-member merchants changed to accept cards. In turn, the growing number of member merchants contributed to raising more revenues from VAT. Thus, the tax basis for VAT increased from US$ 250 billion in 2000 to 350 billion in 2004.

## 3.5. Payment Card Receipt Lottery

The introduction of the monthly payment card lottery in January 2000 attracted the attention of the public. The impact of the lottery program can be understood from two perspectives: First, the usage of a payment cards increase in terms of transaction amount as well as frequency (intensive margin). Second, the number of first time cardholders increases (extensive margin).

It might be plausible but not fair to say that the payment card receipt lottery enhanced the usage of payment cards. Rather, it is better to say that tax deductions in both income tax and

VAT also contributed. However, at this stage it is impossible to disentangle the effects of each subprogram mostly due to lack of observations.

Table 6-9 ●● Growing Trend in Payment Card Transactions since the Introduction of Payment Card Receipt Lottery

(Unit: Thousand cases, US$10,000)

| Qtr\Year | 1999 | | 2000 | | Changes(%) | |
|---|---|---|---|---|---|---|
| | Cases | Amount | Cases | Amount | Cases | Amount |
| Sum | 149,903 | 172,785 | 305,051 | 336,958 | 203.5 | 195.0 |
| 1/4 | 63,555 | 77,425 | 136,052 | 150,047 | 214.1 | 193.8 |
| 2/4 | 86,348 | 95,360 | 168,999 | 186,911 | 195.7 | 196.0 |

source: MOFE

# 4. Policy Measures to Foster Payment Cards in Algeria

Based on 2006 statistics, we may say that the use of payment cards in Algeria is in its infancy. The average number of payment cards per person was 0.04 in 2006, which is a relatively small number compared to Algeria's GDP per capita (around US$ 3000). A systematic problem in relation to the information system inside each bank is the main barrier to the diffusion of payment cards in Algeria. Except l'Algerie Poste, all public banks such as BEA, BDL, BADR and CPA are not able to process their transactions in real time due to the lack of information system between their central server and that of the branches. The current batch information system hinders the diffusion of payment cards as it raises the level of risk related to transaction. Therefore, it is necessary for the bank to prepare a series security measures such as the withdrawal ceiling. These kinds of measures consequently increase the transaction related costs to consumers, which discourages them from frequently using payment cards. The lack of real time information actually creates a vicious circle for the diffusion of payment cards. The relatively under developed usage of payment cards reflect this fact. However, recent efforts by banks such as BEA and BADR to modernize their information systems provide hope. The faster their information system upgrade goes, the wider the diffusion of payment cards will become.

Apart from questions related to the information system, we would like to recommend three policy measures that could foster the usage of payment cards in Algeria. First, the public sector including government and public enterprises need to be mobilized to use payment cards for their expenses. It is crucial for the success of payment card diffusion to create minimum demand that may attract merchants' attention to accommodate card-payment only customers. Second, merchants in the business sector in which purchase frequency is high and the average purchase amount is low need to install card terminals first. Finally, it is necessary to reduce uncertainty related to card transactions and fiscal policy among consumers and merchants.

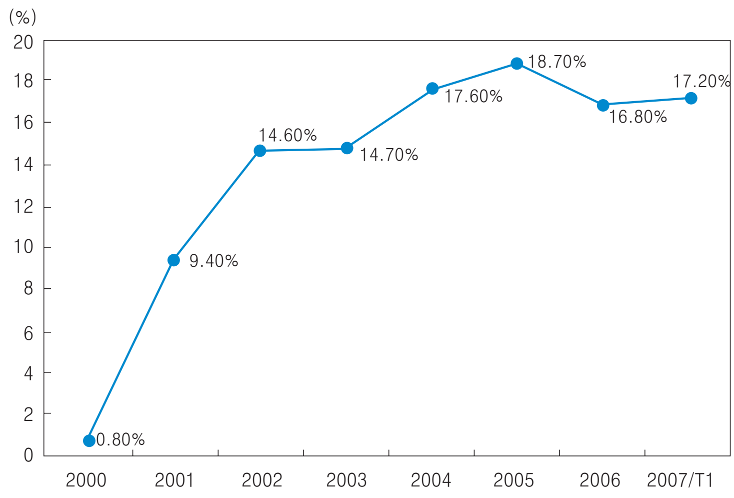
## 4.1. Mobilizing the Public Sector

The current situation of payment cards in Algeria is a sort of chicken and egg problem. As the usage volume of payment cards is small, not many merchants are attracted to equip themselves with card terminals. As the number of merchants equipped with terminals is small, not many consumers are interested in using payment cards. To solve this problem, it is absolutely necessary to create a critical mass of demand as well as to secure a critical number of merchants accepting payment cards.

To create a demand, the Korean government approached both individual and organizational buyers by providing tax incentives mentioned in the earlier section. Its effect on organizational buyers was particularly significant. As shown in <Figure 6-7>, since the introduction of governmental policy requiring card payment for corporate expenses whose value surpasses US$

50 for entertainment and US$ 100 for regular usage in 1999, the proportion of corporate purchase cards has started to soar. It accounted for only 0.8% of total card payments in 2000 but climbed to 18.7% in 2005.

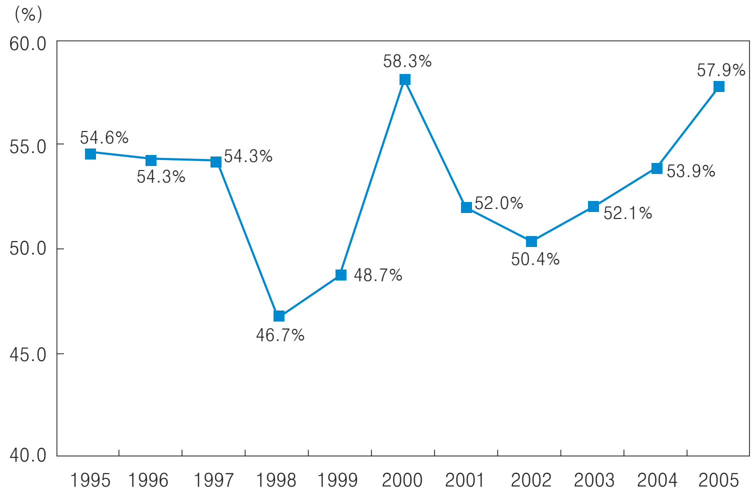
Figure 6-7 ●● Corporate Purchase Card/ Total Payment Card ($)




Source: CREFIA

As the public sector weighs relatively high (57.9% in 2005) in the Algerian economy (38% in South Korea), it would be envisaged to encourage public enterprises as well as the government to use payment cards for consumables such as gasoline (NAFTAL card) and expenses such as restaurants and business travel. Especially, it is strongly recommended to use payment cards for restaurants instead of adopting a non-card system such as restaurant coupons ('cheque restaurant').

Figure 6-8 ●● Proportion of Public Sector in Algeria (added value based)




Source: l'Office Nationale de Statistiques (ONS) d'Algerie

## 4.2. Priority to Business Sectors of Frequent and Small Amount Purchases

Once a critical mass of demand is created by pushing the public sector, it can attract merchants who are interested in accommodating public sector spending by payment cards. But the level of interest may vary from one industry to another depending on two dimensions: purchase frequency and amount. The one that matters is purchase frequency. Merchants in high frequency purchases tend to be inclined to build relationships with their customers. If they mainly pay by cards, accepting payment cards is inevitable. In South Korea, business categories such as restaurants, apparel retailers, paramedical services, cafes/beverages are positioned at the top in terms of the number of stores which became member merchants of the BC card network in 2006.

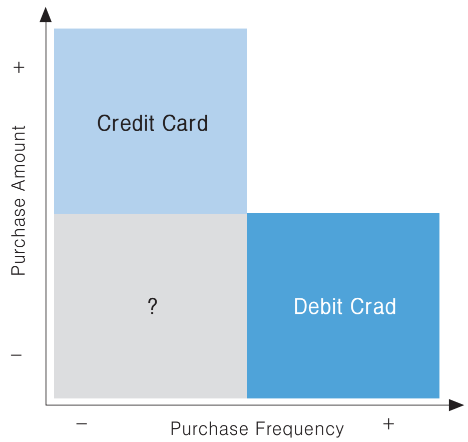
Table 6-10 ●● Top 7 Business Categories of Member Merchants

| Category | # Stores |
|---|---|
| Restaurant | 650,027 |
| Apparel | 197,110 |
| Para medical | 134,508 |
| Cafe/Beverage | 91,002 |
| Stationary | 79,898 |
| Distribution | 79,654 |
| Garage | 76,932 |

source: BC card

The other is the amount of purchase, which influences the consumer to choose the type of card. As the amount of purchase increases, the consumer tends to split the payment over multiple times and the credit function becomes crucial. Merchants mainly in durable products such as electronics, automobiles, and furniture tend to require credit cards which can facilitate payments.

Figure 6-9 ●● Typology of Business Category



<Figure 6-9> illustrates the types of card which are suitable for payment in terms of purchase frequency and amount. As we expect that the Algerian economy will adopt the debit card first and then advance toward charge and credit cards, the priority of governmental policy should be given to business categories having high purchase frequency but low purchase amount such as grocery stores, restaurant, and paramedical services including pharmacy. Once the banking information system is ready and the credit card is introduced, the governmental policy can be extended to cover business sectors having low purchase frequency but high purchase amount.

Based on Korean experiences both tax and non-tax incentives can be envisaged.

- Tax incentives: For major types of tax, the current value-added tax rate in Algeria is 17% for regular products and the corporate tax rate is 30%. In case of income tax, the rate is progressive, starting from no income tax below 60,000 DA (around US$ 750) to 40% over 3,240,000 DA (around US$ 40,500). The value added tax (V.A.T.) generated by domestic business recorded 114,477 million DA and corporate tax did 118,316 million DA in 2006. As for offering incentives, overall two types can be considered. One is related to the reduction of the value added tax (V.A.T.) which can augment the operating profit of merchants and the other is the reduction of income tax for merchants to alleviate tax burdens by accepting card payment. As V.A.T. counted around 7.1% and corporate tax did 6.9% of total fiscal revenue of the Algerian government (1,661,569 million DA), we can expect that reducing both taxes will not harm substantially the revenue stream of the Algerian government in the short run. In case of V.A.T., 3 possible ways can be designed. First, a total exemption of V.A.T. for merchants whose proportion of sales by card payment exceeds a threshold. This threshold can be updated according to the progress of declaration. It will be very attractive but the threshold update may be considered too arbitrary to build the trustworthiness of governmental policy. Second, an exemption of V.A.T. only for the amount paid by card. It also can be quite attractive but it requires the gradual reduction of exemption percentage over time. Finally, an application of reduced V.A.T. rate (e.g., 7%) for all types of sales paid by card. Currently a reduced V.A.T. rate is applied for necessary goods and services. We personally recommend the final type of incentive as it is not only easy to implement but also it will minimize the problem of trustworthiness of governmental policy in the long run. As for the reduction of income tax, it will be necessary to provide a special exemption for merchants classified as exemplary merchants whose sales proportion by card exceeds a certain threshold. It will compensate a possible over-payment of income tax for exemplary merchants vis-à-vis their colleagues who are reluctant to accept card payment.
- Non-tax incentives: currently merchants are paying a rental fee for card terminals. Even though the amount is not excessive, it becomes a burden for merchants to equip themselves with card terminals. Therefore, it will be necessary for the Algerian

government to pay this rental fee until the volume of card transactions reaches the break-even point.

## 4.3. Reducing Uncertainty

In the early stage of the card payment system, individual consumers and merchants tend to be reluctant to use payment cards due to uncertainty. From a transaction security point of view, both share the same type of uncertainly related to system failure such as fraud and system malfunction as well as fiscal policy.

The following are types of card fraud that are prevalent.

- Card-not-present fraud: it can be committed over the Internet or via channels such as mail order or the telephone where the cardholder is not actually present when the payment is processed. Consequently, merchants are unable to check that the individual making the purchase is actually in possession of the card. Nor can they check the physical security features of the card, such as the signature or PIN, to determine if it is genuine.
- Counterfeit fraud: it is the transferal of card data from the legitimate card to a counterfeit or cloned version. In most cases, fraudsters skim card details by copying them from the magnetic stripe using a special device. The information is then transferred to the magnetic stripe of another card, which is then used as if it were the legitimate card. The counterfeit card can be used until the real cardholder cancels it.
- Lost and stolen card fraud: it occurs with cards that are later reported lost or stolen by the legitimate cardholder. Lost and stolen card fraud is often the most difficult form of fraud to tackle. Minimizing the loss incurred as a result of lost and stolen card fraud also depends on how quickly the cardholder informs the issuer that their card is missing.

To combat counterfeit fraud, Europay, MasterCard and Visa joined forces to develop the EMV chip program, which is a common standard for electronic transaction, ensuring chip-card technologies around the world can interoperate.

To reduce the uncertainty related to malfunction, the key is to build a reliable banking information system which secures the whole process of card payment from the moment of purchase, its confirmation to the merchant and the consumer as well as bank transfer of the paid amount.

As for the fiscal policy, consumers may raise questions about the ongoing nature of tax benefits. Once a type of tax benefit is introduced, its minimum level should be guaranteed over an acceptably long period. As for merchants, to compensate for the increase in corporate tax due to the enlarged usage of payment cards which increases the transparency of transactions, it would be necessary to envisage advantageous corporate tax rates for merchants who comply with the governmental policy. As well, a long term road map for fiscal policy should be communicated in advance to reduce the uncertainty among merchants.

## 5. Conclusion

The programs for enhancing payment card usage in South Korea since 1999 suggest different incentives or disincentives for the three involved parties: cardholders, merchant members and payment card companies. Excluding corporate entities, the programs for cardholders focus on employed workers, while those for member merchants concentrate on small business owners.

Another remarkable point is that only incentives such as income deduction and payment card receipt lottery are given to cardholders. In contrast, payment card companies are only forced to levy lower card transaction fees for merchants. Member merchants, positioned between the two parties, are driven by both carrots and sticks. The positive incentives given to them include deductions on VAT and income tax as well as payment card receipt lottery, while tax auditing by the national tax service (NTS) seems most influential among the negative incentives.

Summing up, it is generally accepted that those programs targeting payment card transactions are quite successful. The growth in card transaction volume and the number of member merchants support our conclusion.

We would like to recommend three policy measures that could foster the usage of payment cards in Algeria. First, it is crucial for the success of payment card diffusion to create minimum demand. As the proportion of the public sector in Algeria is relatively high, it would be effective to encourage government and public enterprises to use payment cards for their expenses. It will create a critical mass of demand that may attract merchants to accommodate card-payment only customers. Second, it would be necessary to have a step-wise approach for merchants to equip themselves with card terminals. Merchants in business categories in which purchase frequency is high and the average purchase amount is low tend to accept the debit card first. Once the credit card is introduced, it will be worthwhile to offer incentives to business categories having low purchase frequency but high purchase amounts. Finally, it is necessary to reduce uncertainty by minimizing card fraud, by enhancing the reliability of the information system, and by providing a long term road map for fiscal policy related to payment cards.