Development of Database on Corporate Credit Information

For

ASEAN Plus Three Financial Ministers Meeting, Research Group

By

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and
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Preface

With reference to the terms of reference on a research project "Development of Database on Corporate Credit Information," this draft final report is submitted to the ASEAN Secretariat on 21 January 2007. This report contains the literature survey with theoretical and empirical consideration, field and document researches on the credit information database in ASEAN plus three countries, as well as the United States and EU, and policy recommendations. The research covers the information and financial economics, the perspectives on the new financial technologies such as credit scoring models, and the contents, perspective and issues of the currently existing and planned database of credit information in the United States, European countries and Japan, as well as some of the countries in ASEAN to some extent. In particular, the research team focused on a semi-public, semi-private organization to collect and accumulate credit and financial data to be used for small- and medium-sized enterprises (SMEs) in Japan, the Credit Risk Database. Its successful performance will provide useful experience to the construction of credit database in East Asia, as well as the region as a whole.

Some of the core recommendations include the construction of both private and public credit registries / bureaus in East Asia, especially those specifically designed for SMEs, making use of new technology of scoring models. Regional cooperation in this field is required for upgrading legal and institutional infrastructure as a prerequisite for such databases.

This draft final report is to be discussed in the Wrap-up meeting in Seoul on 29 January 2009. The research team will reflect the discussion and comments in the meeting to revise the draft for further consideration.

Hachinohe University Research Institute
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Executive Summary

Major Research Findings

Information Asymmetry in Finance and its Implication to SME Finance

The theories of the information suggest that the financial firms would tend to become intermediaries (banks). However, the availability of financial information, including the agency problem and transaction costs, still affects the banks. The banks suffer from the problems of information particularly in lending to Small- and Medium-sized Enterprises (SMEs) and lending in developing countries. Diverse lending technologies are employed by the banks for reaching different types of clients, especially where clients do not have conventional collateral or where collection of collateral is not secure. While it has been conventional practice to distinguish between (i) transactions lending, based primarily on ''hard'' quantitative data, such as a credible set of borrower financial accounts, or secured on assets, and (ii) relationship lending, based significantly on ''soft'' qualitative information, in practice the menu is much broader (World Bank (2007)).

The relationship lending tends to be costly for the lender, and as such requires either high spreads or large volumes to be viable. If the customer's creditworthiness is hard to evaluate, then there may be no alternative to relationship lending. And in a sense relationship lending is at the core of banking business, and is where banks continue to have a comparative advantage over markets and non-bank financial institutions, even in developed countries. Indeed, limited access to credit in some difficult environments may be attributable to the reluctance of existing intermediaries to do relationship lending on a small scale. For lenders willing to put in the effort, relationship lending can, however, be profitable. Other lending techniques, such as leasing, factoring and export finance, have not been often used in developing countries, potentially reflecting the shortcomings of the underlying legal, information and institutional environment.

Throughout the East Asia, the SMEs far outnumber the larger enterprises, and their contribution to employees is dominant. In large, SMEs are owned and operated by the founder's family, where the ownership and management are not clearly separated. While the SMEs in Japan obtain access to credit allocation from the local banks and financial cooperatives, those in developing countries in East Asia generally not. The financial information of the SMEs in these countries is too limited to judge the status of operation, and their governance structure is often unclear. The SMEs often disclose no

information. The relationship banking in the developing countries are too costly for the banks without the scale merits, and the lack of the financial information makes the banks' transaction lending too risky. As a result, the largest problem that SMEs face is the difficulty in accessing to finance from the market. Their access to credit often is limited to informal financial institutions and internal finance, e.g. lending from relatives and friends.

Credit Registries/Bureaus and Recent Development of New Lending Techniques

Collection and management of credit information in a database is performed by what are most commonly called credit information registries or bureaus. Distinguish is sometimes made between "credit bureaus" (information brokers) and "public credit registries" (usually managed by the central bank, with mandatory participation by a narrower range of financial institutions). They may be either public or private, and a country may have both a public registry and one or more private registries. Credit registries and credit bureaus are an important tool for the expansion of transactions based lending technologies. Credit bureaus and registries are one of the mechanisms for sharing information about potential borrowers. According to some definition, they are the "information brokers, which operate on the principle of reciprocity, collecting, filling and distributing the information supplied voluntarily by their members."

The recent development of information pooling and sharing technologies applied to the debt financing, including the SME financing. One of the most important technologies is the use of models for credit scoring. These models are used both by individual banks and by credit registries that serve a larger segment of the financial community (or bank regulators). Credit registries are important for their use of this technology, in a way that contributes to financial activities in various ways, including the scoring the SME lending.

Implication of the Study

Public or private credit information bureaus / registries are primarily used for making commercial and personal loan decisions, managing existing loan portfolios, and at the same time for use in oversight and provisioning of the banking sector. The creation of such bureaus / registries will improve the financial market functioning in the ASEAN plus three. This is especially true for the lending to SMEs. High ratios of East Asian household sector assets in "savings and deposits" suggests that banks will continue to be

major lenders of funds, hence there is a strong argument in favor of establishing and strengthening public credit bureaus in ASEAN, with compulsory or voluntary memberships by enough types of financial institution to cover at least as high a percentage of total lending as in Japan when Japan's high-growth period began.

Some of the private credit bureaus / registries in the United States have been engaged in East Asia. The experience of other countries strongly suggests that the establishment of credit bureaus / registries would facilitate the lending, promote the competition among lenders, and reduce the financial evaluation costs, those often leading to lower interest rates. Public credit registries may serve the financial authorities to supervise the banking sector, and contribute to the stability of the financial systems. The private and public registries may work as complements each other.

In addition, the experience of Japan on the SME credit information database (CRD) would be useful. The unique mix of semi-public, semi-private organization in Japan may provide a pragmatic model in the construction of credit information, particularly in the economic, administrative and political context in East Asia. The scoring model technologies, which the organization possesses an advantage on, and the service derived from them are the essential activities in the organization to sustain. As the scale is the key for these databases, regional cooperation would be desirable to harmonize, exchange and integrate such databases, including those for SME landings, in the future. If combined with securitization technologies, the bank lending to SMEs may be bind as securities. Good rating and scoring of the lending claims would serve as essential infrastructure for such securitization.

At the same time, especially to the larger enterprises and multi-national corporations in East Asia, improvement of credit ratings has an important implication as a means of promoting development of a bond market. Credit rating agencies in the ASEAN countries are relatively new and relatively weak. Guiding their growth and development to ensure advantages from their functioning requires nation-by-nation attention to the requisites for achieving the advantages, but there also is a modest regional organization of CRAs, that deserves assistance for organizational development and capacity building, as it can both assist members and work toward regional coordination and cooperation.

Policy Recommendations

The Policy Recommendations made in this report include the followings text. They cover the development of credit bureau / registry in ASEAN, creation of SME credit

information database, and regional cooperation to develop regional information sharing in East Asia.

(1) Development of Credit Bureau / Registry in ASEAN

While establishment of credit bureau /registry will lead to expand lending and stability of financial systems in general, the diversity of the economic and cultural characteristics of countries in the ASEAN multiplies the challenges that accompany the difficult task of creating a system in their countries. Some countries like Indonesia, Singapore, Malaysia and Thailand have already started to incorporate the functionalities of a credit bureau into their credit architecture. Other countries like the Philippines and Viet Nam are slowly gearing up to move towards this same direction despite being beset by problems such as good data capture and the legal-regulatory structure to effectively monitor credit bureau activities.

The key features to establish the working credit information database, identified here, are: to create and upgrade legal framework, to ensure safeguard of information in operation of the database, to establish public policy control to avoid misuse and abuse the database, to secure privacy protection, and to achieve good supervision for violation of regulations. Private and public registries appear to work as complements each other, but the public registries should not crowd out the private.

(2) Creation of SME Credit Information Database

Creating an SME credit bureau is one direct answer to the information asymmetry challenges. The successful experience of Credit Risk Database (CRD) of Japan may be applicable to ASEAN countries. While public sector would need to subsidize the initial investment for computer system and to pay other fixed costs, the database can operate privately. The challenges experienced by the CRD include the data collection with overcoming the free-rider problem, strict code of conduct to maintain the data security, development of the technique to encrypt the borrowers profiles, and provision of services of value to the customers who contribute the data. Development of well-performing scoring models would be essential services to be provided to the customers as a reward.

Further feasibility study is required to identify the issues to apply the system to the developing countries in ASEAN and other regions. Among all, careful consideration is required on the selection of items in the financial document to be collected;

management frameworks, particularly the ownership (private or public, or mix of them) and government intervention; collection of data (voluntary or mandatory). It is also carefully considered that the initial fixed costs, which are normally sunk costs, for establishing the computerized system can be financially justified compared against the merits of the database in the ASEAN developing countries. The selection of items may have an important implication on creating regional information sharing system in ASEAN plus three. Generally, the requirement should be the minimum, reflecting the diversity of the ASEAN countries. But, key items should be included such as the profiles of the borrowers and basic items in profits and loss and balance sheet documents.

(3) Regional Cooperation to Develop Regional Information Sharing in East Asia

Financial markets in ASEAN will remain fragmented and its development will move at an individual-country pace if no serious efforts are established to harmonize credit and financial practices. The establishment of a regional information sharing system will empower financial institutions to grow and perform at a rate that would complement existing programs to develop the region's SME sector and Asian bond markets. An ASEAN credit information sharing infrastructure would eventually propel the region's SME firms to a paradigm of securitization and, possibly, capital market access for financing further growth.

From a regional standpoint, holding annual regional financial forum involving all stakeholders in the SME sector would provide the necessary opportunities to exchange information, views, and programs and invite dialogue towards the establishment of an SME information database in each country with the view of eventually creating a regional SME information exchange hub.

This would necessitate a regional SME definition to enable the formulation of regional policies and initiatives for ASEAN SMEs. To encourage financial institutions to maintain an SME database, the creation of a common reporting framework for SMEs is suggested. This is to ensure consistency and accurate presentation of SME data to banks, government and other institutions. Not only will this serve as an initiative to move forward with a regional SME information database framework, it would likewise promote information consciousness and reporting discipline among SMEs.

Issues to be Further Studied

This report contains the literature survey, field and document researches on the credit information database in ASEAN plus three countries, as well as the United States and EU, and policy recommendations. In light of the wide range of issues to be explored in this field, we have identified several items for further research. First, the present perspectives of the credit registries / bureaus in ASEAN should be further examined. Their costs, both private and public, to set up the system would be the key issue. As is true in the United States and Europe, the history of development in credit registries / bureaus is considerably diverse in East Asia. Examining their country-specific roles would help indentifying the good practice applicable to other countries in East Asia.

As described above, a credit information database for SMEs would be further scrutinized on the institutional framework, financial requirement, and legal framework both for a country and region. Some more country case studies will merit the study, in particular in Korea and some other ASEAN countries.

Finally, the regional cooperation mechanism to create a harmonized information sharing system, especially for SME lending, should be further considered so as to maximize the benefits of the information database in the region. This initiative would contribute to the development of Asian Bond Initiative. The ASEAN plus Three Financial Ministers Meeting process provides an effective regional forum for this issue.

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Introduction

While private banking still plays the main role in the region as a financial intermediary in East Asia, local domestic banks are not responding well enough to the strong requirements for finance in the communities they serve. A particularly significant fact underlying this current situation is the problem of "information asymmetry," whereby financial institutions lack adequate information on borrowing firms, especially small- and medium-sized enterprises (SMEs), the cost for information gathering is high for them, and the accuracy of available information remains low. This results in the lack of their access to finance.

This issue is particularly important in East Asia, because of the widely-recognized dominant roles of SMEs, in creating employment opportunities, supporting local economic activities, promoting entrepreneurship, producing innovations, and supporting larger corporations. This is true both in the industrialized countries among the ASEAN plus three members, i.e. Japan and Korea, and the developing countries in the region. This lack and incompleteness of financial information in the banks has led to the SMEs' lack of access to formal finance. Moreover, in terms of macro-economy, the weak finance sometimes led to the outflows of domestic financial resources once from the region, which are in turn re-invested toward East Asia by the foreign financial firms.

An important approach to address the problem of information asymmetry is to improve the provision of information for systematic evaluation by the financial institutions about the creditworthiness of business borrowers. One of the organizational forms to provide such information is the rating agency, which is solely engaged in rating and related work. The rating agencies in East Asia tend to operate for the largest firms, only. On the other hand, the governments in East Asia become increasingly interested in creating and strengthening information sharing system, such as credit bureaus / registries. Electronic database of the financial information, either publicly or privately operated, are being established, based on the accumulated data in the credit bureaus and other institutions. In the United States, the credit histories of the owners of SMEs are used for loan evaluation my means of a credit scoring model. In Japan, a kind of semi-private and semi-public organization is established as an information sharing mechanism for SMEs.

This report examines the perspectives and issues of the development of databases of corporate credit information for promotion of the financial market

development in East Asia. The financial databases specified in this report are the electronic database of financial indicators of the lending firms to be used by the financial institutions and lenders for their credit evaluation. As indicated above, the focus is naturally placed on the bank lending to the SMEs in the region. However, the analysis and recommendations in this report cover the roles of the database for the bond financing in the region, as well as the finance to the SMEs and consumers through the financial institutions other than banks. And the discussion extends to the possible contributions of the database to the creation of the common bond markets in the region.

One of the motivations of the Asian Bond Market Initiative (ABMI) is to mobilize the domestic financial resources within the region, that may also contribute to the monetary and currency stability. The establishment of the financial information database will serve the similar objective to that of ABMI, i.e. to facilitate the domestic financial resource mobilization. Moreover, the well-prepared database of the corporate credit information will serve as basic infrastructure for the ABMI, too.

This report consists of four chapters and conclusion with policy recommendations. The theoretical consideration on the information and financial intermediary comes first in Chapter 1, followed by more detail research on the information sharing mechanism in Chapter 2. The advanced experience in the United States and Europe is introduced in this chapter. The next chapter (Chapter 3) contains a comprehensive study on the credit information database in Japan. A unique mix of semi-public, semi-private credit information database for SMEs in introduced in detail in the chapter. A review on the present status and perspectives in the credit information in ASEAN countries is in Chapter 4, considering the challenges and issues to develop the SME finance through the establishment of credit information database. Finally, a short summary of the implications of the research and policy implications comes. Policy recommendations conclude the report.

Chapter 1

The Roles and Characteristics of Credit Information

1-1. Information Asymmetry and Financial Intermediaries

1-1-1. Information Economics and Financial Markets: Information Asymmetry

Studies have accumulated in the information theory and market equilibrium. The earlier works of Akerlof (1970) and Spence (1973), and subsequent contributions of Rothschild and Stiglitz (I975) and Riley (1975) focused on the existence of market equilibria under the existence of asymmetric information. **Asymmetry in information** in the market means the information difference between sellers and buyers in the market about the various features of the goods traded in the market. They showed that equilibrium in markets with asymmetric information and signaling may have quite different properties from equilibrium either with no information transfer, or with direct and costless information transfer[1].

Financial markets are typical cases with the informational asymmetries. In the words of Leland and Pyle (1977), borrowers know their collateral, industriousness, and moral rectitude better than do lenders; entrepreneurs possess inside information about their own projects for which they seek financing. Lenders would benefit from knowing the true characteristics of borrowers. But moral hazard hampers the direct transfer of information between market participants. Borrowers cannot be expected to be entirely straightforward about their characteristics, nor entrepreneurs about their projects, since there may be substantial rewards for exaggerating positive qualities. Moreover, verification of true characteristics by outside parties may be costly or impossible.

In the situation, the markets will suffer from the adverse selection problem, resulting in poor performance, without proper information transfer. Consider the financing of projects whose quality is highly variable. While entrepreneurs (i.e. borrowers) know the quality of their own projects, lenders cannot distinguish among them. Market value, therefore, cannon but reflect *average* project quality. If the market were to place an average value greater than average cost on projects, the potential supply

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[1] Signalling equilibria may not exist, may not be sustainable, and may not be economically efficient.

of low quality projects may increase, since entrepreneurs could foist these upon an uninformed market and make a sure profit. But the average quality is likely to become low, with the consequence that even projects which are known by the entrepreneur to merit financing cannot be undertaken because of the high cost of capital resulting from low average project quality. Thus, where substantial information asymmetries exist and where the supply of poor projects is large relative to the supply of good projects, venture capital markets may fail to exist.

For projects of good quality to be financed, information transfer from the entrepreneurs to lenders must occur. Moral hazard may prevent direct information transfer. Nonetheless, information on project quality may be transferred if the actions of entrepreneurs can be observed. Leland and Pyle (1977) asserted in the context of the role of the bank intermediary that one such action, observable because of disclosure rules, is the willingness of the persons with inside information (i.e. the banks) themselves to invest in the project or firm. This willingness to invest may serve as a signal to the lending market of the true quality of the project; lenders will place a value on the project that reflects the information transferred by the signal. They used this theoretical framework to explain the existence of financial intermediary by banks.

1-1-2. Banks as Institutions to Reduce Information Asymmetry

Several major studies on financial intermediation concentrate on **the role of banks in reducing informational asymmetry**. As a pioneering study, Leland and Pyle (1977) suggested that informational asymmetries may be the primary reason that intermediaries exist. If entrepreneurs seek financing of projects whose true qualities are known only to them, the entrepreneur's willingness to invest in his own project can serve as a signal of project quality. While signaling incurs welfare costs by inducing entrepreneurs to take larger equity positions in their own firms than they would if information could be directly transferred; the set of investment projects which are undertaken will coincide with the set which would be undertaken if direct information transfer were possible.

The existence of financial intermediation, the financial firms (i.e. the banks) that hold one class of securities (lending) and sell securities of other types (deposit), can be viewed as a natural response to asymmetric information. While the transaction costs can only partially explain the existence of the intermediaries, **informational asymmetries**

may be a primary reason to explain their existence[2]. The information gathering organizations would better take a form of financial intermediary firms, buying and holding assets on the basis of its specialized information, because it can overcome the following two problems of appropriability. The first problem is the appropriability of returns by the firm, i.e. public good aspect of information. More specifically, purchasers of information may be able to share or resell their information to others, without diminishing its usefulness to themselves. The second problem relates to the credibility of that information. As it may be difficult for potential users to distinguish good information from bad, the price of information will reflect its average quality. Firms which expend considerable resources to collect good information will lose money because they will receive a value reflecting the low average quality. This is like Akerlof's market for used cars "lemons" for sale. These two problems will be solved if the lending firm becomes an intermediary, because the firm's information is embodied in a private good, the returns from its portfolio. While information alone can be resold without diminishing its returns to the reseller, claims to the intermediary's assets cannot be. Therefore, a return to the firm's information gathering can be captured through the increased value (over cost) of its portfolio. The credibility of the information is also assured as the intermediary itself buys the assets.

1-1-3. Financial Intermediation as an Information Transmitter

Diamond (1984) develops a model which shows that financial intermediaries can exist simply because they provide an efficient means of evaluating and monitoring borrowers. Several works followed the reference of Diamond, extending the theory. These information transmission theories argue that banks provide unique information production services in an imperfect capital market. Their theories suggest that banks know more about the prospects of the firms they lend to than do others. Thus, bank loan agreements should convey useful information to the market.

Diamond's intermediaries *monitor* borrowers. Since monitoring is costly, it is efficient to delegate the task to a specialized agent; a bank In Diamond (1984) borrowers must be "monitored" because there is an ex-post information asymmetry in that lenders do not know how much the firm has produced. Only the individual borrower observes the

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[2] If transactions costs are not present, ultimate lenders might just as well purchase the primary securities directly and avoid the costs which intermediation must involve. Transactions costs could explain intermediation, but their magnitude does not in many cases appear sufficient to be the sole cause.

realized output of his project, so contracts cannot be made contingent on the output. Consequently, a lender is at a disadvantage because the borrower will not honor ex ante promises to pay unless there is an incentive to do so. The first possibility Diamond considers to solve this contracting problem is the possibility of relying on a contract that imposes non-pecuniary penalties on the borrower if his payment is not at least a certain minimum. This contract is costly because such penalties are imposed in equilibrium, reducing the utility of borrowers. If, instead, the lender had available an information production technology, then the information asymmetry could be overcome by application of this technology, at a cost. Perhaps this would be cheaper, and hence more efficient, than imposing non-pecuniary penalties Diamond termed production of information about the borrower's realized output, at a cost, "monitoring"

In Diamond (1984), the intermediary monitors borrowers on behalf of investors who lend to the intermediary. But, then it would appear that the lenders to the intermediary have to monitor the intermediary itself ("monitoring the monitor" problem). Lenders to the intermediary may reduce monitoring costs if the costs of monitoring the intermediary are lower than the costs of lenders lending directly to borrowers and directly incurring the monitoring costs. Diamond's fundamental result is to show that as an intermediary grows large, it can commit to a payment to depositors that can only be honored if, in fact, the intermediary has monitored as it promised. If not, then the intermediary incurs non-pecuniary penalties, interpreted by Diamond as bankruptcy costs or loss of reputation. The discussion led to the application of principal - agency theory and large references followed.

1-1-4. Diverse Lending Technologies To Reduce Information Asymmetry

The theories of the information in the previous sub-section suggest that **the specific institutional shapes, as well as the structure of the debts and portfolio, of the financial organizations (i.e. banks) reflect the information asymmetry**. In the presence of greater information asymmetry, the financial firms would tend to become intermediaries (banks). However, the availability of financial information, including the agency problem and transaction costs, still affects the banks. The banks suffer from the problems of information particularly in lending to Small- and Medium-sized Enterprises (SMEs) and lending in developing countries. Diverse lending technologies are employed by the banks for reaching different types of clients, especially where clients do not have conventional collateral or where collection of collateral is not secure. While it has been conventional practice to distinguish between (i) transactions lending, based primarily on

''hard'' quantitative data, such as a credible set of borrower financial accounts, or secured on assets, and (ii) relationship lending, based significantly on ''soft'' qualitative information, in practice the menu is much broader (World Bank (2007)).

The relationship lending tends to be costly for the lender, and as such requires either high spreads or large volumes to be viable. If the customer's creditworthiness is hard to evaluate, then there may be no alternative to relationship lending. And in a sense relationship lending is at the core of banking business, and is where banks continue to have a comparative advantage over markets and non-bank financial institutions, even in developed countries. Indeed, limited access to credit in some difficult environments may be attributable to the reluctance of existing intermediaries to do relationship lending on a small scale. For lenders willing to put in the effort, relationship lending can, however, be profitable[3].

Even where traditional transactional lending based on transparent financial accounts is not available, other forms of transactions lending may be possible. Provided the relevant laws are in place, asset-based lending such as factoring, fixed-asset lending, trade finance and leasing are technologies which can release sizable financing flows even for small and non-transparent firms to finance the relevant assets. Factoring does require a degree of creditworthiness, not necessarily of the borrower, but rather of its customers, which may often be the case, as where a major exporter buys on credit from smaller suppliers. As a result, factoring is found to be more prevalent where credit information is good, though it does not seem to require a high degree of property rights protection.

However, **these techniques have not been often used in developing countries**. For example, leasing constitutes only a few percentage points of fixed investment. The limited role of leasing and other non-standard debt financing is found all over the developing countries, potentially reflecting the shortcomings of the underlying legal, information and institutional environment (World Bank (2007)).

1-2. Banks as Intermediary in East Asia

1-2-1 Bank as Intermediary in East Asia: Historical Review

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[3] Credit networks employing and sustaining a form of social capital through relationship lending have long been observed in different parts of the world, often characterized by a common ethnicity of the participants.

The financial intermediary system today varies among the ASEAN+3 countries, reflecting the much diversified backgrounds in their economy, history and society. Common characteristics do exist among them, however. This section first shows the contrast between the two major types of financial systems in East Asia, namely bank-based financial system in Japan and Korea, and foreign direct investment-led financial system in ASEAN. Discussion on the background of the common characteristics in East Asia follows. The text in this section often refers to the theories of information asymmetry, presented earlier in this study. The discussion here is intended to contribute a brief view of the perspectives and background of financial sectors in East Asia, in connection with credit information.

(1) The Bank-based Financial System in Japan

Japanese economy grew rapidly until the end of the 1970s. The active investment for emerging industries required long-term and stable funds to finance them. At the same time, Japan continued to enjoy high macroeconomic private savings rates. The domestic savings have always exceeded the sum of private and public investments. With the prudent fiscal policies until the 1980s, Japan continued to record surplus in the trade and current accounts, without any massive macroeconomic need for capital inflow / borrowing from abroad. The cross-border capital mobility was regulated and limited in Japan until the end of 1970s. Without disturbance from the international financial markets, the financial sectors in Japan had only to concentrate on intermediating the domestic saving to domestic investment.

After Japan having achieved the catch-up process to transform to an industrialized and developed economy in the 1980s, the Japanese government initiated to follow internationalization and globalization process in the financial sector. However, the excess domestic savings continued, despite the rapidly expanding public debt in the 1990s and 2000s. Up to now, Japan has, as a whole, always played as a supplier of savings in the world economy. This contrasts the situation of Korea and other newly industrialized countries in the development process, whereby savings tended to run short.

Banks have played a dominant role in financial intermediary in Japan. The government had guided to the bank-based lending system under the regulations since the 1940s. During the high economic growth period until the mid-1970s, the banks played a major role to allocate the domestic savings to the most efficient industries and sectors. The regulation of the government oppressed the interest rates of bank deposits, offering

excess rents to the banking sector. The financial institutions (mainly, larger banks) selected and targeted the sectors with the highest potentials. In the catching-up process, the banks generally enjoyed low risks with stable returns, because they could learn from the successful experience on growing sectors from the other advanced and industrialized countries. Little information asymmetry about the performance of the borrowers should have existed under the circumstances. Accordingly, the Banks' lending and allocation of funds recoded considerably good performance (Yoshino et. al (2006)). The government strictly regulated the new entry to the banking business, and discouraged the competition among the existing banks on their deposit and lending interest rates and their establishment of new branches. Because of the regulation and protection, the consumers in Japan presumed that the banks would not bankrupt, in spite of the insufficient deposit insurance.

The larger banks (city banks) in Japan took the core roles of the groups of the large firms with close ties to the banks (*keiretsu*). This institutional arrangement and long-run relationship considerably reduced the information asymmetry. For example, Hoshi, Kashyap and Scharfstein (1990, 1991) find that Japanese firms in *keiretsu* are less liquidity constrained compared to firms without such ties. Also, firms with close ties are able to invest more when they are financially distressed, suggesting the importance of a bank relationship.

(2) Small- and Medium-sized Enterprise Lending in Japan

The bank-based intermediary system in Japan has been segmented. Larger city banks conducted lending mainly to larger firms, while regional and smaller banks and financial cooperatives, to regional firms. The latter group mainly allocated funds to SMEs in the region. The SMEs are important for economic activities in terms of number and number of employees, while many are owned and operated by the founder's family, where the ownership and management are not strictly separated. Besides, with many disclosed information too limited to judge the status of operation, their governance structure is often unclear. The largest problem that SMEs faces is difficulty in accessing to finance from the market. Some have high technology and growing potential, but many generally have low ROE and financially rely on loans from banks.

After the 1990s, the globalization proceeded and the banks in Japan increasingly faced business risks. The banking system as a whole seriously suffered from the non-performing loan problem in the 1990s and early 2000s. While the long and hard

recession absolutely contributed to the problem, a part of it was attributable to the inability of the Japanese banks to deal with the increased risk. In particular, in the segmented banking sector mentioned above, the small regional banks and financial cooperatives received more serious adverse impacts from the structural change. The outward relocation of manufacture from local areas in Japan toward the other Asian countries was a trend in the late 1990s and 2000s. Because the manufacturing sector had served as the main customers to the local banks, they faced gradual but steady erosion in their customer base. This, as well as the prolonged macroeconomic recession, contributed to the accumulation of non-performing loan in the local banks. Banks' reluctance of extending loans and resulting credit crunch emerged in the late 1990s and the 2000s. The problem was particularly serious for the SMEs. This was a background for intensifying the credit guarantee and provision of finance to SMEs. This also led to the idea of the establishment of the database of financial indicators and documents of SMEs in Japan, which was an initiative of the government to address the credit crunch to SMEs (see Chapter 2).

(3) Bank- and Government-led Financial Intermediaries in Korea

Since the 1970s, the Newly Industrialized Economies (NIEs) in the far-east Asia, including Korea, were at the stage of extensive growth and industrialization, when the main challenge was to import and deploy foreign technologies. As Japanese banks did in the high growth period, the banks in Korea tended to do the known things in known ways, with successful results. A tightly regulated and controlled banking system that channeled funds to industry underwrote the capital formation that was the vehicle for technology transfer and the engine of extensive growth. The situation closely resembled that of Japan in the 1960s and 1970s. The firm groups and conglomerates, in particular, played important roles to reduce the information asymmetry in finance and facilitate the flow of funds in Korea.

It should be noted, however, Korea, as developing economies at that time, also tended to run short of domestic savings and needed to draw overseas capital inflows. The government played a leading role to guide the allocation of such financial resources from overseas in the form of government borrowing and overseas aids (World Bank (1995)). They historically relied on the government sector to obtain, channel and allocate financial resources from abroad. Bank lending took the major role in financial intermediation under the regulated low deposit interest rates. The system functioned well for the larger firms and conglomerates. The SMEs were often financed in local, and sometimes

informal, financial institutions until the 1970s, and information asymmetry remained problematic for the SMEs.

(4) Foreign Direct Investment-led Finance in the ASEAN Countries

In general, the inflows of foreign direct investment (FDI) played the major role in attracting overseas capital in the ASEAN countries (Okuda (2001)). Foreign affiliated firms, with higher technologies, much experience and know-how, undertook larger-scaled investment projects with low risks. The foreign affiliates, that became naturally larger firms, have functioned as the cores in introducing new technologies and their dissemination in the countries, as well as obtaining required investment funds from the overseas.

Domestic banks, which collect domestic savings in the form of deposits in the ASEAN countries, extend lending to domestic projects. However, in contrast with Japan or Korea, many of the countries in ASEAN, which made rapid industrialization since the latter half of the 1980s, took a different approach of finance the investment required for the development. While the banks dominated the financial intermediary in the ASEAN countries, the larger-scaled investment funds were mainly procured through direct investment. Liberalization policies in the financial sectors and capital inflows fully supported the development and industrialization by promoting the inflow of direct investment. The banks in these countries included the family banks that mainly financed domestic SMEs. And foreign affiliated banks tend to run the business mainly with the multi-national corporations.

1-2-2   The Status of Bank Lending in East Asia

(1)   Common Features in East Asia: Bank Loans Dominate Over Bond Finance

We should stress, however, that common features exist in East Asia. Two features may deserve discussion in this section. The first is the dominance of bank loans over bond issuance, as the major tool for the firms to get finance. Apparently, the ASEAN plus three countries have a common characteristics of heavy reliance on bank loans. The sizes of their banking sector have expanded with their economic growth. Moreover, the size of deposits as a share of GDP actually expanded during the 1980s and the first half of the 1990s before the Asian crisis (Yoshitomi and Shirai (2001)). In contrast, East Asia generally has not seen the bond market development.

More recently, as Table 1-1 below (from Eichengreen (2004)) demonstrates, the domestic bond market capitalization (the sum of corporate, financial institutions and public-sector issues) in Asian emerging (developing) markets was only 40.6 percent of GDP in 2000. This is much lower than the average for industrialized countries, where it is fully 118.9 percent. At this level of aggregation, the developing economies in ASEAN are considerably behind the industrialized countries, in particular the United States.

Table 1-1: Bank-centered Finance in Asia (as a percentage of GDP, 2000)

	Domestic Credit Provided by Banking Sector	Stock Market Capitalization	Outstanding Domestic Debt Securities
Asian Emerging Markets	124.7	83.5	40.6
China	132.7	53.8	32.9
Hong Kong	141.4	383.3	26.5
Malaysia	149.1	130.4	83.3
Singapore	89.6	165.7	46.7
Korea	103.3	37.2	58.4
Thailand	121.6	24.1	25.4
Developed Countries	175.1	119.7	118.9
Japan	310.5	65.2	125.8
United States	161.5	153.5	148.5
Europe	123.1	112.6	86.4

(Source) Eichengreen (2004) from World Bank and BIS

The developing countries in ASEAN rely more on banks and less on bonds than other developing countries in the world. Historically, these developing economies in ASEAN grew rapidly for many years under the dominance of banks. This was also the case in Japan and Korea. In Table 1-1, bank intermediation is especially important in China, Korea and Thailand. Bond issuance is particularly weak in Thailand (Eichengreen (2004))[4].

The bank-based financial intermediary system, if poorly implemented, may bring about an inefficient allocation of resources and additional crisis risk. Banks and the companies to which they lend in East Asia, especially the crisis-infected countries in ASEAN countries, including Thailand and Indonesia, tend to be linked by family and government controls. The relatively short term of most bank loans implies that a shock of confidence can leave these economies more vulnerable to disruptive credit crunch. This poses one of the rationales for the policies to develop the bond markets in Asia to stabilize the financial and currency markets. Intensifying the banks' function to mobilize the

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[4] In the transition economies, such as China or Viet Nam, the government-owned financial institutions functioned as the financial intermediary until recently. Bringing up private financial system has been the key policy.

domestic financial resource would also contribute to the stability.

The share of corporate bond finance has increased in the latter half of 1990s in some Asian countries with privatization of public companies and the diversification of financing after the crisis. In spite of this growing trend, corporate bond markets are largely underdeveloped because of the small size of issues, relatively shorter maturities, and illiquidity in the secondary markets.

(2) Explanatory Factors of Bank-based Intermediary System

According to a survey in Eichengreen (2004), the bank-based financial system and the undeveloped bond-market may have four broad classes of explanation as the reasons aside from the guidance of the governments.

(1) The first group emphasizes structural characteristics of the region's economies. For example, a number of East Asian economies are small, and small countries find it more difficult to develop bond markets insofar as these have a certain minimum efficient scale. The structural characteristics may include tropical climate and colonial history in ASEAN countries.

(2) The second group of explanations focuses on the structure and management of the financial system. This includes the intensity of competition from the existing banking system, the quality of market supervision, the presence of a government bond market, the absence of institutional investors and rating agencies, and the adequacy of trading, settlement and clearing systems. This view emphasizes that the government, by putting in place the necessary market infrastructure, and official oversight can reduce the riskiness of saving and investment.

(3) The third group focuses on macroeconomic policy. In East Asia, the comparatively strong fiscal position was not conductive to the development of public bond market.

(4) The fourth and perhaps the most relevant explanation here in this context is history. While their backgrounds are diversified among the countries, banks invariably dominated East Asian financial markets for many years. Once there may have been good reasons for the bank-based system. The information and contracting environment gave bank intermediation a strong comparative advantage, as discussed in the former section of the information theory. Banks were a particularly convenient vehicle for advancing governments' industrial policy. While the circumstances have now changed, banks retain their first-mover advantage. Institutions have adapted to their dominance, locking in bank intermediation and locking out debt market (Sharma (2000)).

Many of the backgrounds mentioned above are changing. Cooperative policy initiatives in the region, such as the ABMI, have push forward the change, and economic development in the ASEAN members and progress of financial technologies paved the road toward more bond-oriented and equity-oriented finance. Notwithstanding, the roles of the bank in the financial sector will continue to be dominant and, in particular, their roles will be increasingly important in the finance to SMEs and micro-finance. To improve the access to the bank credits for the SMEs and micro-finances, it would be essential to improve their access to the bank finance. Providing access to all the layers of the society is an important policy targets for sustaining the development and reducing poverty in the region. This would also contribute to the domestic resource mobilization, which shares the common objective with the development of the bond markets in the region.

(3) Dominance of SMEs and Their Lack of Access to Finance

It is not only Japan where SMEs are dominantly important for economic activities. Throughout the East Asia, the SMEs far outnumber the larger enterprises, and their contribution to employees is dominant. In large, SMEs are owned and operated by the founder's family, where the ownership and management are not clearly separated. While the SMEs in Japan obtain access to credit allocation from the local banks and financial cooperatives, those in developing countries in East Asia generally not. The financial information of the SMEs in these countries is too limited to judge the status of operation, and their governance structure is often unclear. The SMEs often disclose no information.

In some model cases of relationship banking, the financial institutions (banks) are expected to share the management information of these corporations and play an important role in corporate governance through professional financial services, including advice for management. Particularly, in the developing countries, however, such relations are too costly for the banks without the scale merits, and the lack of the financial information makes the banks' transaction lending too risky. As a result, the largest problem that SMEs face is the difficulty in accessing to finance from the market. Their access to credit often is limited to informal financial institutions and internal finance, e.g. lending from relatives and friends.

1-3. Emergence of New Financial Technologies: Pooling and Sharing Information

In the context of the scope of this study, we should stress the **recent development of information pooling and sharing technologies applied to the debt financing.** One of the most important technologies is the use of models for credit scoring. These models are used both by individual banks and by credit registries that serve a larger segment of the financial community (or bank regulators). The internal procedures of individual banks are not directly relevant to this study, other than the extent that they provide data to credit registries. **Credit registries, however, are important for their use of this technology, in a way that contributes to financial activities in various ways.** Of passing interest, moreover, is securitization with particular regard to SME finance. In this sub-section, introductory comments are made on the definition and some significance on the credit bureaus and registries with regard to information sharing. The next chapter extensively discusses the issues.

Collection and management of credit information in a database is performed by what are most commonly called **credit information registries or bureaus**. Some writers distinguish between "credit bureaus" (information brokers) and "public credit registries" (usually managed by the central bank, with mandatory participation by a narrower range of financial institutions). They may be either public or private, and a country may have both a public registry and one or more private registries. Credit registries and credit bureaus are an important tool for the expansion of transactions based lending technologies (Miller (2003); Love and Mylenko (2003); World Bank (2007)). Credit bureaus and registries are one of the mechanisms for sharing information about potential borrowers. According to the definition of Jappelli and Pagano (2000), they are the "information brokers, which operate on the principle of reciprocity, collecting, filling and distributing the information supplied voluntarily by their members."

Two basic types of credit, relevant to registries, are: (1) corporate credit, taking shapes of bank loans and trade credit, and (2) consumer credit (of subsidiary relevance to this study), which comprises mainly credit card debt, mortgages, and motor vehicle financing credit (all of which are relatively standardized). A single registry (in the private sector) may handle both types of data, but they are ordinarily the concern of different companies. Banks maintain their own credit records, and there are some companies that provide, for a fee, basic information on unlisted companies for reference by vendors or prospective vendors to those companies. Data possessed by banks, for present purposes, may be considered not to be a database but merely an accumulation of

data. This is because of the strong proclivity of vertical use (both longitudinal data and data specific to a discrete customer) as opposed to horizontal use (using data for all customers for decisions regarding a single one). Further, details of the scale, depth, scope, and other characteristics of the data, let alone the accuracy or quality of the data, are not known outside of the institution in question. Even if data on lending is collected by a central bank, as discussed later in this study, in practice only a few aspects of discrete-borrower data are collected, and data aggregation prior to collection is common, so that there are further limitations concerning possible use of internal data at lending institutions. Data collection and mining by individual lenders, although a matter of some importance to bank regulators or oversight agencies, is not directly of interest in this study. It may be noted, however, that some aspects of forthcoming change in accounting principles may contribute to improvement of the quality of data collected on customers, which eventually will help improve efficiency in the financial system.

Aggregating corporate credit information has value for the national banking or monetary authorities, who operate credit registries for use by themselves and cooperating with financial institutions that provide input. **For the authorities, banking sector supervision and bank provisioning are the areas where the database is best used** and for the cooperating institutions (that are often required by law to report loan data, according to certain parameters) improvement of lending decisions as well as loan portfolio management provide the major value of the database.

Banks accumulate a record of defaults, financial data, and non-financial data on their borrowers. When the banks make loans, they obtain "soft information" (Berger and Udell (2002)) about borrowers like the characteristics of the management and the business plan. If banks share credit information between themselves through credit bureaus or registries, uninformed banks can acquire new information about potential borrowers at relatively low costs. With such new credit information, they can reduce the problem related to adverse selection, and they will be in a better position to make new loans at competitive prices. Credit bureaus or registries make borrowers' loan payment history available to different lenders, facilitating information exchanges and reducing screening costs. The advantages goes to the borrowers including SMEs in particular as these smaller companies are more heavily dependent on bank loans than larger companies that can raise capital in securities markets. One particular advantage is that the problem of asymmetry of information is mitigated. That is, more and better information is made available to lenders, and this contributes to the improvement of credit supply (and the efficiency of the lenders).

There are other effects in using credit bureaus. First, if only one bank has the credit information about a borrower, other banks cannot make loans to the borrower because of the informational problem. The informed bank can charge higher interest rates than the rates that are competitively determined because of limited competition between banks. If banks share the information, they will face intensified competition and be able to charge only the competitively determined interest rates. Second, by sharing the default information of borrowers, banks are better able to avoid making loans to the firms that are likely insolvent. At the same time, if borrowers know that they are penalized by banks in case of insolvency, they will make more efforts to repay bank loans, which will reduce the probability of default. Third, it is usually the case that borrowers have multiple bank relationships. If banks acquire the information about the total amount of bank loans of firms, they will less likely make loans to debt-ridden firms, which will reduce the potential cost of bankruptcies.

The establishment of these information sharing systems in the developing countries has closely followed the trend of financial sector reforms to pursue liberalization and market economy. These governments aimed at creating the proper institutions and infrastructure for financial markets concurrently with liberalizing the financial activities. Such infrastructure for financial market development include reforming bankruptcy laws, ensuring disclosure, and enacting new legislation regarding creditor rights and credit reporting, as well as improving information sharing among lenders by fostering the development of credit bureaus and registries.

The credit registries and credit scoring (reviewed in the third section of this chapter), have an important link with the database of credit information. After reviewing the bank's intermediary functions in ASEAN plus three countries, the discussion in this chapter follows on the roles and significance of financial information database and credit scoring technology, and their implications to the borrowers, including the SMEs.

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Chapter 2
Information Pooling and Sharing Systems and Database:

Diverse lending technologies are employed by the banks for reaching different types of clients to overcome the information asymmetry. Particularly in the context of East Asia, where SMEs play a dominant role in the economy, the information asymmetry results in their lack of access to finance. The new technologies of information sharing, including **credit bureaus and registries and credit rating agencies**, can help overcome and reduce the problem. The credit information database will serve as essential infrastructure for the introduction of new technologies. This chapter discusses the significance of the technologies to pool and sharing credit information, introducing the experience mainly in the United States and Europe, and considers the roles of information database in East Asia. While the former part of the text in this chapter focuses on credit registries, we should also discuss the credit rating agencies in the latter part of the chapter, which are supposed to be of importance as information sharing system.

2-1. Introduction: The Pooling and Sharing of Credit Information

A credit registry, as an information sharing system, collects information and organizes it as a database for its own use and use of others, particularly contributors of information. The generation of credit information by public and private entities (credit information registries or bureaus) increases rapidly, with population and economic growth, the application of information technology, and other factors. The value of such information is greatly enhanced when it is pooled, processed (e.g., identity concealment or data cleansing), accumulated, and made available to pre-qualified users other than the organization that collected the information in the first place. Also enhanced, however, are the magnitude of problems such as protection of privacy and the security of data, as is well known from the frequent reports in the US and Japan of leaks, loss and misuse of personal credit information, including identity theft crimes. Information clearly is power -- if properly, or improperly, utilized and managed. Improvements related to credit information can greatly facilitate the functioning and growth of the credit market, and through that the financial market and economy of a country, a region, or the world economy generally.

A credit information database is of value for the following reasons, while

they are just indicative and not be meant exhaustive**;**

1. It decreases information asymmetries between borrowers and lenders, thereby reducing or preventing selection of poor-quality borrowers and avoiding moral hazard.

2. It allows lenders to more accurately and efficiently evaluate client characteristics (risks) and improve portfolio quality. Default rates are lowered.

3. Transparency is improved, through the improvement of information on borrowers' credit quality, and by the analysis of their creditworthiness.

4. It facilitates monitoring of loan portfolios by participating financial institutions. For instance: the American Banking Association issues a quarterly report called the Consumer Credit Delinquency Bulletin. It covers 400 banks and eight types of consumer loans.

5. It serves to ease adverse selection problems and thereby reduce constraints on and lower the cost of credit for good borrowers. A recent study of 5,000 companies in 51 countries has shown that when there is an existing credit bureau, there is a probability of 40% that an SME will succeed in obtaining a bank loan; without a bureau the probability is 28%.[5]

6. It increases credit volume in, promotes growth of, and contributes to the stability of the financial market.

7. It works to create 'reputational capital" (often more valuable to lenders than physical collateral), or proof of a good credit or repayment history.

8. It reduces cost and time requirements imposed on lending institutions, thereby increasing their efficiency.

9. Knowledge on the part of the borrower of the pooling of information for reference provides a stronger incentive to fulfill obligations and stay off of a blacklist, thereby alleviating moral hazard. The disciplinary effect of this knowledge can help prevent excessive borrowing.

10. At the level of the macro-economy, increased supply or volume of credit information expands lending, and increases transparency of credit markets.

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[5] Miller (2003), Love and Mylenko (2003).

11. It also facilitates microfinance initiatives, helping diversify the sources of SME finance. Note in this connection the rapid expansion of microfinance schemes in many countries, often with support of aid donor agencies.

12. In the case of personal credit information sharing, it promotes use of consumer credit, with benefits including the facilitation of home ownership and creation of household assets. Smaller and newer SMEs can be provided with greater access to credit.

13. For the government, it supports bank supervision especially with regard to credit risk, and provisioning of banks (when the central bank supervises or operates the database). Further, the distribution or concentration of risk exposure, by region or sector, is made clearer.

14. The government obtains information for its own economic research, policy planning and policy implementation support including. For example, for a country where the agricultural sector is particularly large, monitoring farm credit is a suitable activity for administrative and policy work.

15. To the extent that information technology is deployed in conjunction with software tools such as credit scoring, financial institutions have stronger justification for cooperating in the exchange of data.

16. Geographic (domestic regional) disparities in SME access to finance can be reduced if a viable credit database is matched with an IT-supported system for access by institutions in remote or disadvantages locations.

17. Competition between financial institutions can be promoted, leading to greater overall efficiency in the sector.[6]

Conversely, failure to share information -- i.e., **the asymmetry issue -- creates these problems in the operation of the credit market**. First, applicants may be refused a loan in the absence of valid justification. Second, applicants who should not be given a loan may be provided with one. Third, the terms and conditions of a loan may be unfair to one or another party to the transaction. Fourth, there may be a moral hazard situation after the loan is made. Thus, inefficiencies and inequities in finance can easily occur.

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[6] For a discussion of competitiveness in the context of SME financing with emphasis on Japan see Mamiko Yokoi-Arai and Naoyuki Yoshino, *Concept of Competitiveness in the Financial Sector*, Financial Services Agency, Financial Research and Training Center, Discussion Paper Series No. 24 (Dec.12, 2006)

The players are present already: borrowers, lenders, intermediaries, watchdogs and stakeholders. Procedures and institutions are required. Both are defined by the legal and administrative environment, and nature of financial activities, in a given country. Normal responses to normal conditions, and the emergence of crises, have been behind the formation of many credit information entities. The International Finance Corporation (IFC) of the World Bank Group in particular has been instrumental in promoting formation of private-sector credit bureaus (see Table 2-1 below). In almost all the markets where the IFC has thus been active, retail and small-business finance had been growing at a more rapid rate than commercial lending. The World Bank too has been involved; it and the IFC together have been helping at least 15 countries in Africa to improve credit reporting by means including the organization of regional conferences on credit reporting, such as one held for Africa in 2006. This conference was about credit reporting systems and was part of the World Bank-IFC Africa Credit Reporting Program. USAID also has been assisting the development of credit bureaus in transition or developing countries (e.g., Ukraine, Moldova and Kazakhstan, and elsewhere in conjunction with microfinance programs). Japan, as yet has not been active in supporting credit information programs in developing countries.

Table 2-1 IFC Programs for Credit Registries in Asia (as of May 2007)	
Bangladesh	Ongoing discussion between SEDF and DfID on appropriate IFC role in existing public registry.
China	Technical review of CISB scheduled for June 2007; co-hosting conference on SME banking and best practices of credit bureau information in retail banking.
India	Meetings with CIBIL, banks to identify partner to create micro finance/rural credit bureau.
Maldives	Feasibility study to establish credit bureau with public/private partnership, TOR being negotiated.
Mongolia	Completed fact finding mission; IFC TA requested and TOR being negotiated.
Nepal	IFC support requested to review operations of newly privatized bureaus and identify international technical and equity partner; TOR to conduct legal/regulatory review.
Pacific Islands	Potential regional infrastructure initiative being discussed.
Philippines	TOR created and submitted for review; awaiting decision on enabling legislation.
Sri Lanka	CRIB in process of deploying replacement bureau platform; interested in outreach and expansion into micro finance market.
Vietnam	Working group established to create CoC and select vendor by Q3/Q4.
Source: http://www.ifc.org/ifcext/gfm.nsf/AttachmentsByTitle/FI-CB-ProgramStatus/$FILE/FI-CB-ProgramStatus.ppt#388,14,Program status	

in Asia.

Among borrowers from banks, **publicly owned companies** are required to make periodic disclosure of financial and business information, according to various laws and regulations as well as private-sector standards such as those for accounting. Being subject to these requirements as well as the discipline both markets for their products and services and the capital and securities markets where they raise capital, they engage in transactions, and ensure interaction with owners (and prospective owners, i.e., the investment community) and stakeholders. They tend to buy and sell according to relatively well established practices and reasonably good contracts. A large percentage of business is with repeat customers. Many practices are more or less standardized in a given industry, especially when commodities are involved. The trade creditworthiness of these companies thus becomes established and is subjected to various real world influences, and often high-profile government or private-sector scrutiny.

Institutions that lend money maintain records of the performance of borrowers in repaying principal and paying interest, and collect financial and other information, hard and soft, from the borrowers and other sources. As is obvious, the nature, extent, and quality of information for or from publicly owned companies is much different from those qualities of information about privately held companies. The collected information is treated as confidential. Details about bank policy and management regarding their internal credit data are not publicly disclosed. As part of government oversight of financial sector, however, information on bank lending and performance of those loans is collected by the central bank (or monetary authority) directly or through an intermediary. This is done for control and monitoring of bank lending and loan performance, and provisioning of banks, but the information is also useful for other purposes in research and administrative activities. A threshold for reporting of loans is routinely established for management purposes, and this generally excludes SME loans and loan performance from central bank scrutiny (their data of course would appear in totals). Usually, access to this body of loan data, received and processed by a public registry for the central bank, is made available only in aggregate form to institutions providing input.

Privately held companies, of which SMEs dominate, are not required to disclose financial information, and much routine information is assembled on an annual basis, for tax accounting and internal management purposes rather than for providing information for investors and potential investors in the company. Accounting practices and corporate governance are given much less attention, and many business transactions

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are not as formalized as in the case of publicly owned companies. Trade creditworthiness is determined by actual behavior, reputation, personal relations and the financial resources of the owner(s). Nevertheless, there are organizations that collect data that can be used to judge the risk of doing business with or providing credit to one of these companies. These organizations are called **private credit registries**.

Personal credit information is highly standardized and much more numerous in terms of the sources of data, subjects of data (individual persons) and transactions. It comprises, for the most part, credit card usage and payment data, mortgage payment data, vehicle credit (auto or motorcycle loan) payment data, and installment purchase payment data. That is, payments for purchases made at retail.

2-2. Prerequisites for and Features of a Credit Database

As the prerequisites at the macro-financial level, a credit database requires a **financial information infrastructure**. This infrastructure would comprise the following.

1. The legal and regulatory framework for information exchange.[7]
2. One or more private credit bureaus and/or a public credit registry, if it exists.
3. Public sector databases such as property, vehicle collateral and asset registries, voter registration and national ID databases, etc., especially payment databases.
4. Financial statement databases.
5. The informal element of "credit culture."

The second is essential and is considered in detail in the following section. The third is relevant to consumer credit database management and therefore is not considered in this study. When the all infrastructure is in place, it will facilitate credit scoring and automated underwriting; these processes, by reducing costs, make it not merely faster or easier but cheaper for banks when they provide loans and financial services to SMEs. In

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[7] In the United States, sharing of financial information increased in importance in recent years as a matter of national security.   The Presidential Directive 63 (1998) led to the establishment of the Financial Services / Information and Analysis Center (http://www.fsisac.com); this directive updated in 2003 when a new directive "mandated that the public and private sectors share information about physical and cyber security threats and vulnerabilities to help protect the U.S. critical infrastructure."

addition, information technology, resources and networks (hard and soft aspects of all three) will be required; this may be considered as information technology infrastructure.[8]

In the United States, the legal and regulatory framework with regard to consumer credit information (private-sector credit registries) is provided by the Fair and Accurate Credit Transactions Act (FACTA)[9] and other legislation,[10] and in other countries, by various laws. There is no specific law governing trade credit information in the US. A national framework includes matters such as but not limited to the framework for debt issuance, settlement, and repayment; debt reporting standards; legal definition of bankruptcy, and of default and creditors' rights; collateral and guarantees; establishment of lines of jurisdiction; privacy and data protection.

There are, in addition, means of **credit enhancement**, such as guarantee systems, governmental schemes for preferential assistance for SMEs, insurance and so on. Although the improvement of credit guarantee schemes in the ASEAN region is a subject of concern to those working for the development of the business environment and financial markets, or working in operating companies, commercial companies, or financial intermediaries. The improvement of credit information, through credit registries, is a medium- to long-term endeavor, and is evolving in parallel to other improvements including those related to credit enhancement. As discussed in the next chapter, one of the objectives for the government of Japan to create an information database was to ensure and enhance credits to SMEs.

Public registries, being associated with either a central bank or the monetary authority, are based on bank and financial-sector laws and regulations. Whereas a private registry must comply with all general laws and regulations applicable to business concerns, and normally is a for-profit organization, in the case of a public registry there must be **ensuring of the capacity of related government offices to collect, process and provide data**.

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[8] In the case of new formation of databases, apart from linguistic barriers, technical cum administrative problems will be encountered, such as the accessibility of legacy data, and the extent that a bank's branches have computerized their information processing.

[9] FACTA became law in 2003 and was a reauthorization of the Fair Credit Reporting Act (FCRA) of 1970. FCRA required "credit reporting agencies" to keep accurate reports, to distribute credit information in accordance with regulations, and protect consumers. FACTA added provisions relating to mandatory issuance of credit scores, restrictions on affiliate sharing, and other matters.

[10] See preceding note. In addition, in the US, credit-bureau-related protection of consumers and general rules for credit bureaus and data suppliers are, besides FACTA, the Fair and Accurate Credit Transaction Act (FCBA), the Fair Credit Billing Act, and Regulation B (whereby the SEC implements the Equal Credit Opportunity Act).

In some parts of the world, such as Africa, **creditor rights** are weak (cf. the World Bank Legal Rights Index), and enforcement of contracts is difficult; conditions like these area strong hindrance to the development of a credit market. The legal or regulatory hindrances, or limiting factors, to establishment and successful operation of a credit database vary from country to country. As an example, there is evidence from Viet Nam that collateral (secured-transactions) laws in particular, with credit information bureaus, are the two most efficient means whereby access to credit and improved allocation of credit are achieved.[11]

To have value, consumer credit databases require the combination of data from a multiple number of sources. This poses a major challenge to economies where creation of a credit database, improvement of one, or augmented use of one, is a goal. This is because of inherent and major differences in the characteristic of one data subset to those of another. The most immediate and challenging problem, however, is a situation wherein there are no "unique identifiers", as this greatly increases the difficulty and cost of bringing data for a given individual or company together. In the absence of such a marker, serious limitations can be imposed on what can be expected of databases. Even when there is an identifier, such as a national I.D. number or a taxpayer number, each subset of data will have its own parameters, such as reliability, coverage, frequency, integrity, and soon. Availability of legacy data also is an important point for start-up phase work on behalf of a registry. There are likely to be technical differences ascribable to the software and hardware used.

In the case of private registries, which collect data from wider sources than do public ones, a case can be made for use of "alternative data," such as payment data for utilities and telephone service, automobile insurance, remittances, and rent.[12] This would be useful in such cases as microfinance programs or when a developing nation seeks to promote the growth of consumer credit; eventually, this could benefit small business entrepreneurs.

There may be language differences (in Egypt, for instance, some data are in

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[11] See *Vietnam / Increasing Access to Credit Through Collateral* (Secured Transactions Reform, undated document from FIAS Investment Climate Advisory Service [a joint IFC/MIGA/IBRD operation].

[12] This would give access to credit to members of the population who are unbanked or for whatever reason have no credit card. See Give Credit Where Credit Is Due: Increasing Access to Affordable Mainstrean Credit Using Alternative Data. Political & Economic Research Council & the Brookings Institution Urban Markets Initiative, 2006, at www.infopolicy.org/odf/alt-data.pdf.

Arabic, some in English and some in both languages) and geographic or regional differences. Even if the input and output data for database formation in the "+3" nations, China, Korea and Japan, are taken up, the characters used are different from each other. Data quality and the ability to obtain and maintain high quality standards is the greatest challenge faced by registries in emerging markets.[13]

Possessors of data may be unwilling to permit others to use it and reporting entities do not always provide complete information. This is the free-rider problem. The experience in the case of SME credit database in Japan is summarized in the next chapter. In addition to these infrastructure requirements, a **"credit culture"** is necessary for strong growth of credit use, but this is a formidable challenge when a large percentage of the national population is "unbanked," namely lacks a bank account or (as in Mexico) does not use credit, or where the informal sector is particularly strong. It poses important and difficult challenges on politicians, planners and administrators, because of inherent difficulties in balancing goals (e.g., bank regulation vs. consumer utility, or comprehensiveness vs. cost). Thus, there are requirements other than those of the financial infrastructure. In this case it is a matter of education and outreach, supported by the legislative and administrative framework. It is necessary to build awareness of the importance of credit information, and provide assurance that shared information is kept secure. It is important to not repeat the excesses that have become common in some countries, such as the US and Japan, where many persons fell into deep indebtedness through poor management of their credit. Regulation, self-regulation in the industry, advocacy groups, and consumer education are all required in this connection.

In addition to the financial infrastructure, the utility of a database will be determined, to a great extent, by the **information technology infrastructure**. For a macroeconomic view, the World Bank provides a "Networked Readiness Index", but detailed surveys in individual countries would be needed to evaluate this aspect of infrastructure for credit information exchange and use. In East Asia region, high scores in overall standings (for 2006) are reported for Singapore, Hong Kong, Japan, Korea, Malaysia and Thailand, in that order. Comments on this aspect of infrastructure are limited here to mention that the high quality and depth of SME financial data in Japan available through a new credit registry, CRD, will be leveraged much more through the

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[13] This is not to mean that there are no problems in the United States. A 2004 report by the Public Interest Research Group found that 79% of credit reports had errors, and 25% were errors serious enough to possibly result in a "sorry, no" decision from a credit supplier. Further, there are signs that credit card companies may withhold information, to the detriment of their customers, to avoid possible acts by competitors, who could use the information to identify promising marketing targets.

application of XBRL (Extensible Business Reporting Language), or standardized financial statements. One Japanese observer states in this connection that "There is yet no country that has the infrastructure including the IT to "scientifically monitor" small-medium businesses from a global perspective."

2-3 Credit Registries

2-3-1 Public and Private Credit Registries

Credit bureaus or **registries** are either public (compulsory, imposed by regulation, and motivated by banking supervision requirements) or private (member lenders cooperate voluntarily to improve their own decision-making on credit supply). Public credit bureaus are typically operated by the central bank (but not so in the United States, Canada, the United Kingdom and the Nordic countries, that have only private sector credit reporting), and collect information on the performance of borrowers – particularly individual borrowers and SME businesses - in a financial system and provide information to lenders and prospective lenders. Intrinsically, public bureaus are to varying degrees more oriented toward larger scale enterprises than to smaller ones. It may be mentioned, moreover, that as a corollary to the bank-supervision motive, many public registries were established in reaction to a banking crisis. The main government role in the case of the countries lacking a public credit bureau has been consumer protection.

Differences between public and private credit bureaus, other than the factors behind their establishment, are related to: (i) sharing of information, in that private institutions that may be willing to share only "black" or negative information, and may be hampered in collection of "white" or positive information; (ii) the type of information collected and type of services offered, whereby public registries usually provide only basic information, while private registries provide more detailed information and may offer products developed using their information, and (iii) information collection, as public registries, while collected information on a compulsory basis, often to not collect information that may be obtained through voluntary submission, and (iv) the degree of transparency of the data, as public registries may provide access only to the regulated financial institutions that themselves are suppliers of information, an arrangement that tends to hamper development of the credit supply function (Miller (2003); Love and Mylenko (2003)).

Table 2-2 Public vs. Private Credit Registries		
Feature	*Public*	*Private*
Purpose	Bank supervision & credit checks for lenders	Credit checks for lenders
Source of information	Supervised institutions (banks)	Varied sources (banks, retailers, telecoms)
Participation mandatory?	Yes	No
Output	Report (for lenders)	Report and score (about/for consumers)
Positive Info?	Yes	In some cases
Minimum loan size	In some countries	No
Fee for service	No charge or minimal charge	Yes
Basis for operations	Government regulation	Contract
Source: Adapted after Margaret Miller (2003)		

As shown in Table 2-3, there is no pattern in terms of provision of white and black information. A database that supplies only black data, however, has less predictive power than one providing both types of data (i.e., a "full-line" database).[14] Moreover, development of a scoring model is made much more difficult if there are no positive data. Among the issues given attention by researchers and financial specialists is whether collection and use of both black and white information is related to the level of indebtedness, but there is no consensus on this as yet.

The collection of black and white information and the ownership situation in Europe, as an example of the diversity in a given region, is as summarized below (see Table 2-3).[15]

Table 2-3 Types of Information and Ownership of Credit Bureaus in Europe				
Country	*State-owned*	*Consortium of credit providers and*	*Private company owned by financial*	*Private company not owned by*

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[14] Powell et al., *op. cit.,* p. 13.

[15] Amparo San José Riestra, *Credit Bureaus in Today's Credit Markets*. ECRI Research Report, 2002.

		associations	*institutions*	*financial institutions*
Austria		X (B+W)		
Belgium	X (B)	X (B)		
Denmark			X (B)	
Finland	X (B)			
France	X (B)			
Germany			X (B+W)	
Ireland			X (B+W)	
Italy		X (B)	X (B+W)	
Netherlands				X (B+W)
Portugal	X (B+W)			X (B+W)
Spain	X (B+W)			X (B+W)
Sweden			X (B+W)	
UK				X (B+W)

Note: B = black information; W = white information.
Source: Survey of credit bureaus, in: Amparo San José Riestra, *Credit Bureaus in Today's Credit Markets*. ECRI Research Report, 2002, p. 7, downloaded from http://shop.ceps.eu/BookDetail.php?item_id=132 10/5/2007 6:50 PM.

Public and private registries are not mutually exclusive; many countries have both, and there are varying modes of interaction. The public registry in Argentina, for example, provides black information to the private registries. Moreover, if the private registries function well enough, the government in a country where the central bank or monetary authority manages the database can decide to leave the business to the private sector; over time the situation in a given country can change substantially at the institutional level. The higher the share of banks as suppliers of credit, the more important it is to work through and with the banks to develop credit reporting. And since the central bank or monetary authority has oversight or regulatory functions, banks can be mandated to supply information to share. Table 2-4 summarizes the pros and cons for private credit registries, reviewed by the IFC.

Table 2-4 Pros and Cons for Private Credit Registries

Institutional Arrangements for Private Credit Registries		
Institutional Type	Pros	Cons
Private firm with no bank ownership	All types of data; independence	No automatic access to data
Private firm with bank ownership	All types of data; special access to bank data	Indpendence may be questioned
Bank association	Access to bank data; integrity	Only bank data; only bank access
Chamber of Commerce	Retail and non-bank data; broad cover; historical record	No bank data; limited funds for modernization
Commercial and credit insurance firms	In-depth data on commercial sector	Limited coverage,; high cost per entry

(Source) IFC

In the case of Russia and Kazakhstan, this enabled the countries to acquire very active credit bureaus in only three years. Even when a nation has opted for a public credit bureau, if the central bank is made responsible for regulating the bureau, several challenges, such as assuring the people that their personal information is secure, are relatively easy to tackle. In the case of Ecuador and Morocco the central bank operates a database and licenses credit bureaus; Tanzania too is to adopt this mode of operation. In instances where participation in public registries is made compulsory, the competent authorities must first determine the scope of reporting companies, such as finance companies, credit card companies, insurance companies and others.

2-3-2 Development of Credit Registries in the US and Europe

In the United States, more than a century ago, small retailers began to exchange financial information about their customers, and from this beginning small, localized credit bureaus were formed. In Europe, credit registries were started in Germany in 1934 and France in 1939. Significant growth of the credit bureaus is a postwar phenomenon, however, together with the growth of credit card use, development and application of new technology, and other changes (see Box in the case of the United States). It was during the 1990s that there was a surge in formation of new registries, particularly in Asia, Eastern Europe and Latin America[16]. This reflects both growth of emerging countries and, moreover, expansion and change of the financial market in transition economies. In the case of Russia, prior to as recently as 2006 there was no credit bureau. One was created and by July of the following year it covered more than 6,000,000 Russians, and it provides both negative and positive data.

Consumer credit reporting, however, has a much older history dating to the 1830s in America, and the industry there has evolved and grown in keeping with development and growth of the economy and legal framework for the financial sector. Most recently it has grown on the back of growth of consumer credit (reflecting advances in information technology applications among other factors) and development of the market for financial products based on credit card debt (asset-backed securities).

Growth in European credit bureaus has been restrained relative to that seen in the

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[16] For a map showing the status of establishment of private credit bureaus, see http://siteresources.worldbank.org/INTACCESSFINANCE/Resources/CredRepMap.pdf.

United States, owing to (i) strong concern for privacy, (ii) a narrower market for credit, (iii) a more conservative environment regarding introduction of new credit products, (iv) a lower level of household debt than in the US, and (v) heavy regulation of the banking sector until the end of the 1970s. There are three large consumer credit scoring companies in the United States (Experian [Dublin based],[17] Equifax[18] and TransUnion) and about a thousand others, many regional in scope. Because credit cards are honored across borders, and the increase in purchasing through the Internet, the sharing of consumer credit information, or judgments based on it, international movement of information is inherent to consumer as well as commercial credit.

In the United States, combined use of commercial and consumer credit information is provided by the American firm Dun & Bradstreet (D&B).[19] This company specializes in commercial credit, but, more specifically, trade credit, and is especially strong in its coverage of SMEs. D&B utilizes the company's commercial information combined with personal credit data about the owners provided by the three large credit information companies to derive a Small Business Risk Account Score, which measures a small business' ability to pay for goods and services purchased on trade credit terms. D&B is also a major player in the European market for credit information. The combination of consumer and SME credits is reviewed in detail later in this section.

Collection of corporate data is more complex and less standardized than in the case of consumer credit.[20] Jappelli and Pagano state that because of their supply of commercial or business loans, the bureaus that collect corporate data "take a more active role in the production of information, collating market data received from lenders and suppliers together with balance sheet data and information from the company itself and from public sources about shareholders and managers.

Recent growth of consumer credit in developing countries (retail credit in emerging markets grew 62% during 1996-2004) and occasional consumer loan crises has

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[17] Experian Information Solutions Inc. was incorporated in 1996 as a spin-off of TRW, an automotive electric parts maker that diversified into credit information reporting and by 1984 had in its TRW Information Services the largest credit bureau in the country. In 1996 Experian merged with CCN, a credit information bureau owned by Great Universal Stores of the UK; after the merger two direct marketing companies were acquired. It is active in more than 50 countries. Sales in 2001 were $1.44 billion.
[18] Equifax, Inc., incorporated in 1913 at the Retail Credit Company. By the time World War II began, the company was providing 7.5 million reports a year. It trades on the NYSE; it is the largest company in the industry in the US. 1998 sales were $1.62 billion By the time World War II began, the company was providing 7.5 million reports a year.
[19] The history of D&B is treated in Rowena Olegario (2006).
[20] Tullio Jappelli and Marco Pagano (2000).

made credit information more important, and the expansion and development of credit bureaus providing information for the consumer credit market in developing countries is readily evident. Overseas expansion of the large American credit card companies (particularly Visa and MasterCard), and the three large consumer credit scoring companies is one aspect of this expansion. In the case of Visa, the International Financial Corporation (IFC) of the World Bank Group agreed to work with the company to support private credit bureau development in more than 10 countries, starting in 2005. Experian, in 2007, announced plans to create a credit bureau in India, in a joint venture with four Indian banks that will create a rival to the Credit Information Bureau of India Ltd., the largest provider of credit information services to banks and financial institutions in India. This would be one of many entities that the three large American credit information bureaus are active in.

(Appendix 1 to 2-3-2) History of Integration of Credit Bureau in the United States[21]

More than a century ago, small retailers began to exchange financial information about their customers, and from this beginning small, localized credit bureaus were formed. However, the credit bureau significantly grew during the postwar period. Individuals did not have access to credit information about themselves, and by the 1960s some Americans were very concerned over misuses of the information. Subsequently, in 1971, the Fair Credit Reporting Act (FCRA) was passed by Congress and signed by the president; it sought to both protect privacy and promote accurate credit reporting. Revision of this law in 2003 provided for free or reasonable-cost access to personal credit information. Increase in incidents of identity theft in recent years has led to intense advertising and promotion of personal credit monitoring services.

Traditionally, Americans have been ambivalent on borrowing; credit was considered to be good, but debt was bad. For various reasons, however, overindebtedness has become a social problem (personal bankruptcies have risen), and a business opportunity, for companies who honestly or dishonestly sell services for debt consolidation. Apart from this problem, the major issues have been fees charged by credit card issuers, as these are not regulated and widely criticized as being excessive, and whether consumers fully understand the costs and implications of credit use. Credit cards are American's major source of open-ended revolving credit. They have supplanted

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[21] Regarding the history of consumer credit in the United States see, for example, Calder L. (2006).

installment-purchase plans offered in the past by retailers.[22] The credit issuers fund their unsecured loans primarily by issuing securities backed by the credit assets. Asset-backed securities based on credit card debt have been issued since 1987.

Business credit ratings for SMEs are provided by D&B, and the three major credit information bureaus offer services for SMEs. Experian, for example, provides business credit reports including (1) basic company information, (2) a credit rating ("acceptable, caution, warning, serious risk, and bankruptcy"), legal filings (based on public records), (4) information from of collection agencies, and (5) payment behavior (the company's credit relationships and payment performance, based on information from suppliers), and (6) payment trends (at least for six months) and industry comparison, and (7) general information on the company background.

Integration of the credit bureaus in the US was accomplished by the legislative framework, and the strong growth on the basis of various factors, as mentioned in various contexts above. Among those factors, special mention is derived by (1) strong entrenchment of "credit culture," which is becoming even stronger through aggressive marketing, and includes overindebtedness as a social and economic issue, (2) management strategy of the major credit card companies, (3) management strategy that resulted in domination of the credit information market by three information bureaus, (4) the development of diversified financial instruments based on credit, such as mortgage-backed securities, and (5) technology development, such as the FICO scoring method devised by the Fair Isaac Corporation. Although relevant laws and regulations at the state level differ from state to state (reflecting the "states' rights" tradition), they have not hampered growth, development and integration of the market.

(Appendix 2 to 2-3-2)   Regional Integration and Credit registries in Europe

There are two distinct aspects of Europe's credit information affairs. The most eminent is the matter of **harmonization and integration of the national credit bureaus in the older, larger EU members, with the ultimate, possible objective of a single**

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[22] Thomas A. Durkin, "Credit Cards: Use and Consumer Attitudes, 1970-2000." Federal Reserve Bulletin (Sept. 2000), p. 623-634. The Payment Cards Center at the Federal Reserve Bank of Philadelphia is the major governmental entity concerned with research oncredit card matters; it defines its mission as "to provide meaningful insights into developments in consumer credit and payments that are of interest not only to the Federal Reserve but also to the industry, other businesses, academia, policymakers, and the public at large. The Center carries out its mission through an agenda of research and analysis as well as forums and conferences that encourage dialogue incorporating industry, academic, and public-sector perspectives."

regional bureau. The second is that of the establishment and improvement of bureaus in transition economies.[23] Experience in both aspects provides suggestions for the ASEAN members who are cooperating with respect to credit bureaus.

Economic unification in Europe presents a mixed picture. Capital flows are now virtually unimpeded and at the wholesale level a high degree of integration has been achieved. The retail level, however, retains strong national identities. The payments infrastructure, for example, is still fragmented and this is preventing early achievement of a pan-European banking system. Particular attention has been given to consumer credit, influencing the consumer credit information companies. Because of the relationship between consumer credit and business credit and information related to both forms of credit, the European situation is described briefly below.

The EU issued a **Directive on privacy protection** in 1995, with the deadline October 1998. Not all member states met the deadline. The Directive called for each nation to adopt uniform privacy protection legislation, but the reason for not complying was pre-existence of domestic laws that, for one reason or another, the member did not replace. This is indicative of the difficulty occasionally encountered in efforts at regional integration in Europe. Subsequently, in the Commission issued a European Consumer Credit Directive proposal, but opinions regarding the outlook remain guarded.

The credit culture differs among the European countries, and with this there are differences in laws and regulations related to credit. Although all countries have legislated the information that can be collected, the maximum duration that data can be retained in personal history records, who may access data and how errors can be corrected, there are major differences that impede harmonization. The ownership structure differences and differences in the collection of positive or negative information have been indicated above; there also are differences in industrial structure. In addition, language differences and natural barriers are greater deterrents to harmonization in Europe than they had been to unification in the US, despite differences in state laws and regulations. Legal traditions too differ among the European nations. Further, privacy legislation in each country was different. In Europe, a credit report can only be issued if the debtor gives explicit consent; protection of privacy is thus far stricter than in the US. Differences relative to the US, other than those indicated above, have included cost efficiencies in generating credit reports.

A specifically European condition has been an underdeveloped information

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[23] Kristian Csáky, and Judit Kerékgyártó, *Consumer Credit Legislation in the CEECs*, Brussels: ECRI Research Report No. 3, 2002,.

structure, which hindered cross-border flow of credit. Harmonization of privacy regulation has been accomplished, but presents challenges to non-European countries and especially to Asian countries in light of the APEC privacy initiative.

Integration of credit bureaus in Europe is an ongoing process at present. The outlook for significant progress in integration, however, is not good. Progress that has been made is spotty: smooth crossborder flows of information depend on the type of information or type of institution. Progress has been greater for company information than for consumer information. Seven public registries have signed a Memorandum of Understanding, for the exchange of data across borders, and this may yield contribute to progress in integration.

The South American effort described in this section above was driven by need to attain a workable level of economy of scale; in the case of Europe, however, there is evidence that integration of consumer credit registries would not have positive effects in terms of the efficiency of those companies.[24] Granted that considerations other than efficiency may have greater value, the European situation maybe suggestive for Asia, where there are significant differences in political, economic and sociocultural among countries that could be thought as potentially benefiting from a regional or subregional integration.

There are, nevertheless, forces promoting consolidation of credit registries in Europe, i.e., (1) advances in telecommunications and information technology, that creates new channels for distribution of credit bureau products (mobile banking, e-wallets, etc. come to mind), and (2) the combination of competitive forces and technological progress.

Similar to the US, three companies dominate the consumer credit information business in the United Kingdom (that shares with the US certain credit-related characteristics). Two are the American Experian and Equifax; the third, CallCredit, is but six years old as of 2007 and is affiliated with TransUnion. On the Continent, national systems have replicated the pattern of evolution in the US and replaced regional systems, and a continental system, with perhaps two or three large registries, may be five to ten years ahead in the future.

2-4 Credit Scoring Models

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[24] Laurent Weill, *Efficiency of Consumer Credit Companies in the European Union / A Cross-Country Frontier Analysis.* ECRI Research Report No. 7, July 2004 at http://www.ecri.be/ecri/public/ECRI_RR_No.7.pdf .

2-4-1 Development of Credit Scoring System

The credit bureaus and registries, the systems to register the information on the borrowers, not only ease for the lender the routine task of verifying aspects of the repayment record of the applicant borrower, but **also they also help build a database** which can be used to generate credit scores predicting repayment on the basis of borrower characteristics. Therefore, the development of database of financial information of the borrowing firms is critically important to the establishment of credit registry and credit scoring systems (see Appendix below for what credit scoring means). The technology is especially mature in the United States, where the use of credit scoring technology for small business loans has led to an expansion in the availability of loans to small and riskier firms even by larger banks which would hitherto have somewhat neglected the segment.

Berger, Frame and Miller (2005) illustrates the development of the system for the lending to SMEs in the United States, which deserves a review in detail, here in this sub-section. The credit scoring is a relatively new technology for small business lending that involves processing data about the firm and its owner using statistical methods. It is based on a score, or summary statistic about the applicant's expected future loan performance. Although credit scores had been used for some time in the underwriting of consumer loans, this technology has only recently been applied to small commercial credits, which have non-standardized documentation and were thought to be too heterogeneous. The key innovation is the use of the personal credit history of small business owner, which is highly predictive of the loan repayment prospects of the business. The personal information used in the models may include the owner's monthly income, outstanding debt, financial assets, employment tenure, home ownership, and previous loan defaults or delinquencies (Mester (1997)). The personal information is obtained from one or more consumer credit bureaus and combined with business data collected by the bank and in some cases commercial credit bureaus to enter into the prediction model.

Credit scoring has some obvious benefits that have led to its increasing use in loan evaluation. First, scoring greatly reduces the time needed in the loan approval process. A study in the United States found credit scoring can significantly reduce the time of evaluation for loan approval. This time savings means cost savings to the bank and benefits the customer as well. Customers need to provide only the information used in the scoring system, so applications can be shorter. And the scoring systems themselves are not prohibitively expensive: the price per loan of a commercially available credit

scoring model averages about $1.50 to $10 per loan, depending on volume. Even if a bank does not want to depend solely on credit scoring for making its credit decisions, scoring can increase efficiency by allowing loan officers to concentrate on the less clear-cut cases.

The advantages scoring model provide to both lenders and borrowers are summarized below (see Table 2-5); these are results for SME lending in the US and the extent that these benefits can be realized in emerging markets remains to be determined. In the US the use of credit scoring has had additional value in assuring that lenders are in compliance with the Equal Credit Opportunity Act, and the Fair Housing Act, which prohibit discriminatory acts. In addition to these advantages to lenders, when credit scoring is done by a credit registry, it can enable the registry to offer additional services to its customers, as many precedents in the US indicate. In Japan, it has been pointed out by several observers that the scoring model also provides a benefit in servicing the mid-risk market, that otherwise is at a disadvantage; other countries are likely to face a similar situation.

Table 2-5. Effects of Small Business Credit Scoring	
Advantages to Lenders	**Advantages to Borrowers**
Time and cost savings in the loan review process.	In aggregate, improved access to credit.
Pricing of loans is improved, and risk-based pricing may increase per-loan revenue.	Greater transparency in the loan review process.
Broader geographic scope of business becomes possible, as relationship banking becomes less important and IT is used, facilitating loan application processing even at remote and small branch offices; increase in business finance provided to low- and moderate-income communities relative to that provided by non-scoring banks.	Broader geographic range of possible lenders, as relationship banking becomes less important.
As objectivity and consistency dominate the loan review process, personal bias is eliminated and opacity is reduced.	Possibly higher probability of receiving loans for borrowers in disadvantaged regions, or regions distant from financial institutions, owing to increased objectivity in lending.
Securitization of SME loans is facilitated, as objective, consistent evaluation has been used.	In some cases, lower borrowing costs.
Swift accommodation of "upstream" factors, such as change in a financial institution's cost of funds following an official rate increase, can be achieved.	Faster processing of applications.
The criteria for making credit decisions are fully documented.	Smaller firms, lacking a credit history, have improved chances of receiving loans.
Use of computerized models means the financial officers will have greater confidence in the documentation they must provide and (in the US) sign off on in compliance with the Sarbanes-Oxley Act, which calls for a new level of financial	

reporting and documentation.	
Opening up of the potential market for loans to the "middle risk" segment, hitherto not considered.	
Scores can be used for mortgage originations.	
Scores can be used for soliciting applications for credit cards.	
Source: Compiled by the author. Note: Left and right column content are not matched.	

Fair Isaac estimates that the total cost of processing and underwriting an SME loan without credit scoring is $500 to $1,000, but with scoring the cost is from $48 to $95. In the US, cost savings are gained primarily by purchasing scores from vendors, for automatic yes/no decisions and setting the terms of a loan. The cost savings, whatever it may be, is particularly important in the case of SMEs seeking credit, because the cost of evaluating creditworthiness is fixed, but the amount of the loan and interest income derived from it will be small compared to loans to large companies. **Reduction of costs through adoption of this technology is important for several reasons.** As Wattanapruttripaisan notes, "Most financial institutions have not been able to operate profitably with SMEs as their sole or major debt clientele, despite the interest premium based on higher risk and transaction cost."[25] First, at SME lenders, efficiency is improved. Second, more lenders are encouraged to lend to SMEs. Third, competition among lenders is increased. Although the cost savings improve the potential or real profitability of lending to SMEs, it may be important to verify this improvement, and if possible ensure that it provides a reasonable business incentive, because for many financial institutions SME business is less profitable than that done with larger companies, because SMEs have less demand for services other than the supply of credit.

Another benefit of credit scoring is the improved objectivity in the loan approval process. This objectivity helps lenders ensure they are applying the same underwriting criteria to all borrowers regardless of race, gender, or other factors prohibited by law from being used in credit decisions. Bank regulators require that the factors in a scoring model have some fundamental relationship with creditworthiness. Even if a factor is not explicitly banned, if it has a disparate impact on borrowers of a certain race or gender or with respect to some other prohibited characteristic, the lender needs to show there is a business reason for using the factor and there is no equally effective way of making the credit decision that has less of a disparate impact. A credit scoring model makes it easier for a lender to document the business reason for using a factor that might have a

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[25] Thitapha Wattanapruttripaisan, "Four Proposals for Improved Financing of SME Development in ASEAN." *Asian Development Review*, 20:2 (2003), p. 77.

disproportionately negative effect on certain groups of applicants protected by law from discrimination. The weights in the model give a measure of the relative strength of each factor's correlation with credit performance

The existing models found that the most important indicators of small-business loan performance were characteristics of the business owner rather than the business itself. For example, the owner's credit history was more predictive than the net worth or profitability of the business. While this might seem surprising at first, it's worth remembering that small businesses' financial statements are less sophisticated than those of larger businesses and that the owners' and businesses' finances are often commingled. (Berger, Frame and Miller (2005)).

While some large banks have developed proprietary scoring models, most have turned to outside vendors. The largest external provider, Fair, Isaac and Company, introduced its first credit scoring model in 1995. The model used a sample of more than 5000 small business loan applications over five years from 17 large US banks designed to represent a national pool. Many banks began to adopt the scoring system following the introduction of the first Fair, Isaac model. There are alternative external vendors that are typically also in the commercial credit information business.

(Appendix to 2-4-1) Credit Scoring Model Techniques (Mester (1997))

Credit scoring is a method of evaluating the credit risk of loan applications. Using historical data and statistical techniques, credit scoring tries to isolate the effects of various applicant characteristics on delinquencies and defaults. The method produces a "score" that a bank can use to rank its loan applicants or borrowers in terms of risk. To build a scoring model, or "scorecard," developers analyze historical data on the performance of previously made loans to determine which borrower characteristics are useful in predicting whether the loan performed well. A well-designed model should give a higher percentage of high scores to borrowers whose loans will perform well and a higher percentage of low scores to borrowers whose loans won't perform well. But no model is perfect, and some bad accounts will receive higher scores than some good accounts.

Information on borrowers is obtained from their loan applications and from credit bureaus. Data such as the applicant's monthly income, outstanding debt, financial assets, how long the applicant has been in the same job, whether the applicant has defaulted or was ever delinquent on a previous loan, whether the applicant owns or rents a

home, and the type of bank account the applicant has are all potential factors that may relate to loan performance and may end up being used in the scorecard. Regression analysis relating loan performance to these variables is used to pick out which combination of factors best predicts delinquency or default, and how much weight should be given to each of the factors. Given the correlations between the factors, it is quite possible some of the factors the model developer begins with won't make it into the final model, since they have little value added given the other variables in the model. Indeed, according to Fair, Isaac and Company, Inc., a leading developer of scoring models, 50 or 60 variables might be considered when developing a typical model, but eight to 12 might end up in the final scorecard as yielding the most predictive combination (Fair, Isaac). Anthony Saunders reports that First Data Resources, on the other hand, uses 48 factors to evaluate the probability of credit card defaults.

2-4-2 Scoring Model and Basle II Standards

Usage of a scoring model is likely to be encouraged by regulatory changes. Under Basle II international capital standards that would apply to the largest banking organizations, small business loans issued under credit scoring would receive relatively favorable treatment as retail exposures (i.e., have lower capital requirements), whereas other small business loans may be treated less favorably as corporate exposures. As discussed in Chapter 3, Basle II brought about a strong motivation to establish the information database in Japan.

Moreover, the credit information industry will see considerable expansion in the years ahead, with the move to Basel II[26]. And the more sophisticated the statistical analyses of loan loss probabilities, the more small borrowers can benefit in terms of cheaper access to bank loans. For example, using data from the Chilean public credit registry, Adasme, Majnoni and Uribe (2006) have shown that the distribution of loan losses from small loans (less than US$20,000 equivalent) is much less skewed than that for large loans.

2-5. The Roles of Pooled Financial Database

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[26] While public credit registries may have some potential advantages, such as the power to compel lenders to share positive information, the experience has been that most public registries do not make as much of the information at their disposal as they might, and increasingly they are being complemented, where they exist, by private credit bureaus.

2-5-1　Pooled Financial Database

The credit registries help build a database which can be used to generate credit scoring models predicting repayment on the basis of borrower characteristics. As surveyed above, the technology is developed in the United States, where the use of credit scoring technology for small business loans has led to an expansion in the availability of loans to small and riskier firms. And the use of credit scoring for small business lending, often based on data collected for credit registry purposes, is becoming more widespread in developing countries as well, though there are many countries which it has not yet reached: this is banking at what is currently a very active frontier.

The introduction of the new technology of credit scoring requires the financial institution to access to large pool of financial data of their lenders. In the United States, the first banks to use scoring for small-business loans were larger banks that had enough historical loan data to build a reliable model. For example, Bank America's model was developed based on 15,000 good and 15,000 bad loans, with face values up to $50,000. Now, credit scoring is available to lenders who do not have sufficient volumes to build their own small-business loan scoring models in the United States. In March 1995, Fair, Isaac introduced its "Small Business Scoring Service," a scoring model that was developed with RMA, a trade association of commercial lenders. The model was built using five years' worth of data on small-business loans from 17 banks in the United States, a sample of more than 5000 loan applications from businesses with gross sales of less than $5 million and loan face values up to $250,000; banks provided data on good and bad accounts and on declined applications, as well as credit reports on at least two of a business's principals and on the business. Separate scorecards were created for loans under $35,000 and for loans between $35,000 and $250,000.

Accuracy is a very important consideration in using credit scoring. Even if the lender can lower its costs of evaluating loan applications by using scoring, if the models are not accurate, these cost savings would be eaten away by poorly performing loans (Mester (1977)). The accuracy of a credit scoring system will depend on the care with which it is developed. The data on which the system is based need to be a rich sample of both well-performing and poorly performing loans. The data should be up to date, and the models should be re-estimated frequently to ensure that changes in the relationships between potential factors and loan performance are captured. If the bank using scoring increases its applicant pool by mass marketing, it must ensure that the new pool of applicants behaves similarly to the pool on which the model was built; otherwise, the model may not accurately predict the behavior of these new applicants. The use of credit

scoring itself may change a bank's applicant pool in unpredictable ways, since it changes the cost of lending to certain types of borrowers. Again, this change in applicant pool may hurt the accuracy of a model that was built using information from the past pool of applicants. Account should be taken not only of the characteristics of borrowers who were granted credit but also of those who were denied. Otherwise, a "selection bias" in the loan approval process could lead to bias in the estimated weights in the scoring model.

As the nature of information database, the more information is stored in the credit registry, the more useful it is in selecting out the risky borrowers without reducing overall access to credit. For example, Powell et al. (2004) use the actual data in the public Argentine credit registry to show that availability of system-wide registry information can substantially improve the precision of credit decisions even for a large bank. In addition, they show that availability of positive information could enable a lender to lower the default rate from 3.8 per cent to 2.9 per cent while still lending to 60 per cent of the sample borrowers.

2-5-2   Strong Relevance of Credit Scoring to SMEs

Despite its growing use for evaluating small business lending, credit scoring is not being used to evaluate larger commercial loans. While the loan performance of a small business is closely related to the credit history of its owners, this is much less likely to be the case for larger businesses. Although some models have been developed to estimate the default probabilities of large firms, they have been based on the performance of corporate bonds of publicly traded companies. It is not at all clear that these models would accurately predict the default performance of bank loans to these or other companies. The credit scoring technique, therefore, is suitable by nature to the SME lending.

Particularly in the developing countries, SMEs require access to credit, as many SMEs originate with the entrepreneurship and financing arrangements of one individual, and when and after these businesses are formed, there often are occasions when the SME entrepreneur uses personal finance to start or keep the business going. SME borrowers also may tend to rely on local institutions rather than national or large ones, in which case there would be a higher probability that "relationship banking" would provide a link between personal credit and credit for the business. As consumer credit grows in scale in developing and transition economies, this should increase in importance. Moreover, the growth of microfinance has increased the important of credit registries in transition economies as well as emerging ones.

The typical amount of a loan provided on the basis of information from a public registry is of a scale comparable to the needs of many SMEs; in the case of Argentina, for instance, a typical loan would be $20,000 or more; in Brazil it would be $300,000 or more. Both growth and development of consumer credit, while involving delicate and difficult issues such as consumer education and protection, privacy assurance, and regulation, among others, also has an SME promotion policy aspect, in that whereas it is predominantly large- and medium-size companies that are covered by public credit registries, generally private registries cover small business and consumers as borrowers. As noted above, the boundary between an SME and an individual entrepreneur is not always clear. If there are links (information exchange) between a consumer credit bureau and a private commercial credit bureau in a given country, the database can be improved, to the advantage of SME borrowers. A second point is that credit card companies can help generate retail volume and improve customer service for retail companies by issuing co-branded cards. Further, the issuing of corporate credit cards provides a source of easy-to-use credit for companies of all sizes.

Creation of a regional credit bureau is one approach, to achieve economies of scale and also to facilitate regional integration or simply promote stronger bilateral relationships within a group. This is the case of TransUnion Central America (TUCA), with investment by the IFC in partnership with TransUnion, in 2002. The countries covered are Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua; individually, each national credit market was small; the IFC sought to attain economies improve efficiency (e.g., through decreasing costs of database management software), facilitate management of data quality, and also standardize product across the nations. The IFC's investment ($400,000, half of the investment planned) was specifically intended to improve awareness of credit information issues among the market participants concerned, and help improve the legal and regulatory framework. Cooperating with the IFC and TransUnion was a Costa Rican company, SFI Corporation, a factoring and credit services firm that expanded credit bureau services after a merger with Trans Union in 2000. Software for database management is readily available from vendors, but the ROI for acquisition operation and maintenance of a database improves rapidly with an increase in scale. TransUnion's South Africa operation provides services for bureaus in Namibia, Botswana and Swaziland.

2-5-3 Scoring and Securitization

Another way credit scoring may encourage lending to small businesses is by

making securitization of these loans more feasible (Mester (2003)). Securitization involves pooling together a group of loans and then using the cash flows of the loan pool to back publicly traded securities; the loans in the pool serve as collateral for the securities. The loan pool will typically have more predictable cash flows than any individual loan, since the failure of one borrower to make a payment can be offset by another borrower who does make a payment. The expected cash flows from the loan pool determine the prices of the securities, which are sold to investors. Securitization can reduce the costs of bank lending, since typically the loan pool is moved off the bank's books to a third-party trustee so that the bank need not hold capital against the loans and the securities provide what is often a cheaper source of funding than deposits.

Securitization has occurred with mortgage loans, credit card receivables, and auto loans, all of which tend to be homogeneous with regard to collateral, the loan terms, and the underwriting standards used. This homogeneity is important, since a crucial aspect of securitization is being able to accurately predict the cash flows from the pool of loans so that the securities can be accurately priced. There have not been many securitizations of small-business loans, partly because of their heterogeneous nature. But credit scoring will tend to standardize these loans and make default risk more predictable, steps that should make securitization more feasible. As was true in the mortgage market, securitization would probably lead to an increase in small-business lending, with nonbank lenders playing a larger role. The market would become more liquid, since unlike loans, the securities are easily bought and sold; thus, diversification would be easier to achieve. Since diversification lowers risk, loan rates could be lower. The securitization in East Asia may take a shape of bond issuance, i.e. Asian SME Bond.

2-6   Credit Rating Agencies

2-6-1   Credit Rating Agencies: Tools of Screening

Credit rating agencies (CRAs) are another form of information sharing mechanisms. According to White (2001), "credit rating firms can help lenders pierce the fog of asymmetric information that surrounds lending relationships." Credit rating agencies evaluate the creditworthiness of firms and provide banks with the credit information. Banks use the information from credit rating agencies to judge the creditworthiness of borrowers, for example in the context of the Basel II framework (see Chapter 3, section 1 for detail). Furthermore, when making new loans, they need information about the borrowers. Thus, banks will be able to alleviate the problem

resulting from adverse selection by acquiring such information from credit rating agencies.

Credit rating agencies also provide useful service to the process of securitization. Recently, banks securitize their business loans, and non-specialist investors purchase these securitized assets. Securitization is "the process of packaging individual loans and other debt instruments, converting the package into a security, and enhancing the credit status or rating to further the security's sale to third-party investors." (Kendall and Fishman (1998); Board of Governors of FRB (2002)) Banks have the information about the default risk of borrowers, but the third-party investors do not. To fill the information gap, credit rating agencies evaluate pooled individual loans and provide the market for securitization with the necessary information.

United States-based credit rating agencies, which rate companies and debt instruments, have acquired great power and influence, and the largest two in particular are active and influential globally. Many institutional investors will not purchase a security that has not been rated. The separation of investment-grade and non-investment grade ("junk") ratings further establishes criteria for purchase of (market demand for) securities. Ratings of sovereign entities have a knock-on effect to sub-sovereign and private-sector borrowers in the same country. Ratings are used in measurement of private financial institutions' capital adequacy, and this has been ensured by Basel II. Despite not being regulators, the CRAs have in effect imposed limiting standards on guarantors of municipal and corporate debt, through matters related to the capital adequacy of the guarantor, management structure, and underwriting practices. They rate not only public bond issues but also industrial companies; it is estimated that Moody's rates 78% of American industrial companies, and S&P rates 66%. Further, they rate structured finance instruments, and this has become a point of contention.

2-6-2 Influence of the Rating Agencies of the United States

These CRAs exert influence on countries other than the US, such as the ASEAN members, through a variety of channels. First and foremost is their influence on the financial market and through that the economy of the US. Second, non-American issuers of debt in the US or international market, including sovereign, sub-sovereign and private entities, need ratings for publicly offered issues and sometimes for private issues as well.[27] There are many examples like this: when India's credit rating was lowered in 1991,

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[27] For example, Roman Kräussl, in "Do credit rating agencies add to the dynamics of emerging

it resulted in restricted access to commercial borrowings, and there was banks became unwilling to renew short-term credit to Indian banks abroad. The largest CRAs have acquired a presence in many countries, often through acquisition of local companies, and thus are in a position to influence the financial markets of those countries. For these reasons, understanding of the functioning of CRAs is important in connection with policy planning for development of credit databases in the ASEAN region.

The three largest, global CRAs are Fitch, Moody's Investors Service, and Standard and Poor (S&P), a division of McGraw Hill. Fitch grew by combining and absorbing smaller companies and joined the other two as an SEC-recognized agency only in 1983. It is now owned by a French conglomerate, FIMALAC. Moody's dates to 1909 and is the first rating agency. S&P was established in 1916 as Poor's, merged with Standard Statistics in 1941, and was taken over by McGraw Hill, the publisher, during the 1960s. Moody's is publicly owned; after it was acquired by Dun & Bradstreet28 in 1962 and spun off in 2000. Fitch was founded in 1913. In 2000 it acquired Duff & Phelps Credit Rating Co. and Thomson BankWatch. A.M. Best, another CRA, was founded in 1899 and has specialized in insurance company ratings and insurance-related financial information. In particular; it rates insurers in terms of their ability to meet obligations to policyholders. There are other rating agencies, which are not recognized by the SEC, but all are tiny in comparison to these.

It is not only the growth and diversification of the US financial market that led to American dominance in credit ratings. Non-financial entities in the US made greater use of debt issues than did their counterparts in Europe.[29] Especially prior to formation of the EU, creation of a uniform financial market and adoption of the euro, capital markets were national in nature, and creditworthiness of borrowers was determined by methods other than ratings. For long, sovereign issuers had only their foreign issues rated, until it became more important to make their domestic issues attractive to foreign investors.

Since 2002 a series of major changes have been made regarding the functioning and regulation of CRAs, leading to changes by the Securities and Exchange Commission

market crises?" (Journal of Financial Stability, 1:3 [April 2005], p. 355-385) finds that sovereign rating changes have substantial influence on the size and volatility of emerging markets lending. The Asian Development Bank has published a 2001 study, How Do Global Credit Rating Agencies Rate Firms from Developing Countries?

[28] Dun & Bradstreet (D&B) was founded in 1841, is publicly owned, and states that it has the largest global business database of any company.   A well known and respected company, D&B is the foremost supplier of trade (business) credit information, in addition to offering a variety of database-derived services. It has a global network of subsidiaries and affiliates.

[29] These factors are after Kristian Sparre Andersen and Anders Matzen, "The Use of Ratings in the European Capital Markets," Danmarks National Bank Monetary Review - 3rd Quarter 1998.

(SEC) in 2003, activity by the International Organization of Securities Commissions (IOSCO), also in 2003, and more recently enactment in the US of CRA reform legislation in 2006.

2-6-3   CRAs Reform

After the outbreak of the Asian currency crisis, the CRAs (essentially, Moody's and S&P) were widely criticized for being tardy in revising their ratings of sovereign issues there. The spread between a Korean issue denominated in dollars had increased by 10 points relative to Treasuries before Moody's changed the relevant rating. The CRAs had been criticized at other times of being too late to act, but this must be considered as part of a comprehensive evaluation of their work, even though in specific cases the magnitude of changes and their impact are very high.

Subsequent to the Asian crisis, events in the United States again focused attention on these companies. The major credit rating agencies revised their ratings of Enron only four days prior to declaration of bankruptcy by that company – without indicating that there was new information. The role of watchdog agencies – ratings agencies being considered among them – was central to a Senate investigation into the Enron affair (by the Committee on Governmental Affairs; January 2002) and hearings (March 2002). The hearings disclosed that Enron had provided false information and had not disclosed other important information, critically impairing the accuracy and reliability of ratings. The Committee released a report (October 2002) that included examination of the work of the three major ratings agencies prior to Enron's failure, finding that even allowing for Enron's behavior the agencies had been negligent in extreme. It was also found that there was an accountability gap with regard to the CRAs.

The Sarbanes-Oxley Act of 2002 required (in Section 702) that the SEC study the role and function of CRAs in the operation of the securities market. In January 2003, the SEC issued the report called for by Sarbanes-Oxley. The SEC did not yet have statutory authority to regulate CRAs, and there were several problems caused by the absence of adequate provision for regulation and oversight of CRAs. At the root of the problem was the 1975 Net Capital Rule issued by the SEC. This set standards for net capital requirements for broker-dealers, including a discount for securities below investment grade that was larger than that for investment grade securities; the determination of what was investment grade was required to be by a "nationally recognized statistical ratings organization" (NRSRO), but there were no registration or license requirements for NRSROs, and approval was given by means of a no-action letter.

At this time, there were only five NRSROs: A.M. Best and Co., Dominion Bond Rating Service (these two having acquired NRSRO status relatively recently), Fitch, Moody's Investors Service, and the Standard and Poor division of McGraw Hill Companies. There was an absence of transparency as to what constituted an NRSRO, for three decades, and in some instances applicants to the SEC had waited for ten years before receiving a rejection.

In 2005 the SEC proposed a definition of an NRSRO but shortly thereafter a bill was introduced in the House of Representatives, with the primary intention of correcting the duopoly situation among the CRAs – the two largest companies had 80% of the market in terms of revenue. It included new definitions of a "statistical rating organization" and a "nationally registered statistical rating organization" (emphasis added). The Senate also prepared a bill, and in September 2006 the President signed into law the Credit Rating Agency Reform Act of 2006 ("CRA Reform Act").

Thus, the specific problems related to Enron and WorldCom were only a spark that became a blaze of concern over pre-existing conditions, as mentioned above. The duopoly was only one of several issues involving CRAs. These companies had other advantages besides an informal high barrier to entry by competitors. They were exempt, for example, from Regulation F-D, an exemption that otherwise would have prohibited selective disclosure of information. They were also exempt from an SEC rule providing for civil liability for parties attesting to the contents of a registration statement; ratings were deemed as not being a part of such statements. These matters were not resolved by the CRA Reform Act.

The dilatory attitude in the past at the SEC regarding acceptance of NRSROs was eliminated by a short-term screening requirement, and several companies promptly applied for registration, including two from Japan, the most recent being Japan Credit Rating Agency, that was registered in September 2007. The CRA Reform Act did not empower the SEC to inspect the CRAs. This continues to be a point of contention. The act did require the CRAs to appoint a compliance officer. The act provided for disclosure that includes credit rating performance statistics, information concerning conflicts of interest, a code of ethics, and qualifications of personne. The practice known as "notching" was not specifically addressed by the act or by the SEC on its own. Notching refers to a CRA's lowering its rating on asset-backed securities "because it doesn't have the business of rating a substantial portion of the underlying assets." It is generally considered in the financial market that this is a technique to keep competitors out of the way.

Further, the matter of conflicts of interest, which has been frequently indicated as

a problem or potential problem, remains a battleground for dedicated reformers and the CRAs. In addition, it has been stated that the CRAs are not familiar with structured finance, and yet rate such securities. These securities are rated by negotiations with the issuers, which some persons see as an atrocious example of mismanagement of conflict of interest situations. These points – not addressed by the CRA Reform Act - attracted all the more attention after the next development of CRA-related problems.

2-6-4   CRAs and Corporate Credit Database in East Asia

The CRAs will continue to have a strong influence in East Asia. As one form of information sharing mechanism, the CRAs serve to reduce the information asymmetry. However, it should be reiterated that the coverage of the CRAs in East Asia, especially in the developing countries in the region, will be limited to largest and listed companies, foreign affiliates and multi-nationals. These are in the sectors of finance, public facilities, heavy manufacturing, and semi-public.

The credit data of CRAs reflects their nature of business. The accurate rating requires a full set of information on the firms for their evaluation. The data should be more profound, timely and thorough, and the evaluation is conducted by extremely high-skilled staff. The cost of rating, therefore, tends to be too high to utilize the services for SMEs. Other tools for information sharing, such as credit bureaus, registries, credit scoring and their hybrids, would be suitable for SME finance and additionally required. The next two chapters will introduce the experience in Japan and the present perspectives in East Asia. In accordance with the major objective of this study, the focus is placed on the credit information database, mainly designed for smaller firms, and does not pay a specific attention to CRAs.

Chapter 3
Database of Credit Information in Japan

Like the other industrialized countries, Japan has no unified database of credit information that covers both corporate and consumer credit. Each segment of the financial industries has constructed the database of its own credit information of the customers, sharing them among the members. For example, consumer loan outlet companies collectively pool the customer data, and exchange the data among them for their internal use for evaluating the applications. The credit rating agencies and financial research companies may be collecting information on the larger firms, while they do not collectively pool and share the financial data of the customers with others. And, some institutions with public nature have established database on financial information of the borrowers. Their data are collected by their member financial institutions, including banks and financial cooperatives.

Information sharing mechanisms are useful to mitigate the information asymmetry between banks and borrowers. As reviewed in Chapter 1 and 2, there are various types of information sharing mechanisms such as credit bureaus and credit rating agencies. Credit bureaus and credit rating agencies are useful in case of loans to large enterprises. But, they normally tend to operate inefficiently as an information sharing mechanism for the small- and medium-sized enterprises (SMEs) mainly because such an operation is not commercially viable against the costs. This chapter introduces a successful example of such database. This is a kind of semi-private and semi-public organization in Japan as an information sharing mechanism for SMEs, i.e. the Credit Risk Database (CRD) Association, which was established in 2001. The organization required substantial front-loaded investment for constructing the computer and informational system which enable the analysis on a vast amount of credit-related information. Thus, it can only be established with the strong support by the public sector. In spite of this, the organization should be managed by the private sector because it has to be operated under market-based credit culture.

The chapter first reviews the background and needs for the establishment of CRD and, in more general, for the requirement of database of financial information to be shared by financial institutions (section 1). An analysis follows on the challenges to establish credit information database which is specifically designed for SMEs (section 2). Next section (section 3) introduces in detail the CRD in Japan. The final section contains conclusion and future issues to be addressed. As an Appendix to this Chapter, an analysis

on the characteristics of SMEs in Japan is attached, which is based on the CRD database. The analysis will demonstrate the characteristics and features of the SMEs in Japan, which will help the unique environments surrounding Japanese SMEs, as well as the background for the features of the CRD database.

3-1. Background

3-1-1 Credit Crunch after "Bubble Economy" in the 1990s

(1) Emergence of Non-performing Bank Loans during the Post-bubble Period

The Japanese financial system continues to rely heavily on the banks in finance for these sixty years since the end of World War II. The domestic credit provided by banks amounted to 311 percent of GDP of Japan in the year 2000, contrasted to the ratio at 175 percent in developed countries as a whole (Eichengreen(2000)). This heavy reliance reflects the historical background, as reviewed in Chapter 1, section 2. The households, which is the major source of savings, maintained strong preference to bank deposits for their savings, which they believed absolutely safe. On the other hand, the larger companies in Japan shifted their source of funds from bank loans to direct finance, through equity and bonds issuance since the 1980s, reflecting deregulation in finance and cheaper costs. The borrowers' (particularly, larger companies') shifts from indirect to direct financing forced the banks to face mismatch in supply of and demand for funds. This was a background for the banks to addict to the lending to risky real estate sector during "the economic bubble period", in the latter half of 1980s.

The extremely ease in the macroeconomic monetary policy to mitigate the recession from the appreciation of yen in the middle 1980s, brought about the asset bubble phenomenon that are characterized by a surge of land and stock prices by speculation. Japanese people adamantly believed "myths of ever-higher land prices." The scope of speculation was also directed to stocks, and fine arts and precious metals. Loans provided by financial institutions to real estate industries pushed the land price up further. In those days, real-estate financing (i.e. real estate and non-bank) secured by land collaterals expanded without adequate risk evaluations due to remarkable appreciation during the bubble period. Although banks should have needed to strictly control risks for loans to address financial deregulation, banks pursued profits by quantitative expansion promoting the existing type of lending. This caused excessive lending.

"The bubble economy" burst in the early 1990s. Stock prices sharply declined

after being tripled in 4 years as of the end of December 1989. A gigantic amount of asset losses saddled the companies with excessive debts and financial institutions, particularly banks, struggled against the accumulated non-performing loans. Japanese economy entered into long-term doldrums and serious asset deflation triggering a long-lasting stagnation. During the period of economic bubble, companies borrowed massive funds believing that asset price would keep surging. After the burst of the economic bubble, however, they found the assets significantly depreciated. Under such conditions, the firms in real estate, construction and distribution sectors faced a difficulty to repay their debts. Approximately 70 trillion yen (about 14% of GDP) out of 400 trillion yen of borrowings by corporate sector were excessive debts. Moreover, the amount of non-performing loans continued to inflate because of the macroeconomic recession thereafter[30]. Banks in Japan wrote off their bad loans with the aggregated amount of approximately 28 trillion yen from FY1992 to FY2000. Nevertheless, the banks still needed to struggle with such a gigantic and increasing amount of non-performing loans remaining at the end of the 1990s.

(2) Non-performing Loans and Credit Crunch

The decline in asset prices after the burst of the economic bubble seriously deteriorated the capital-to-asset ratio of banks, making them hard to achieve the Basel Capital Accord. One of the methods to keep and uplift the ratio is to increase their equity capital, the numerator, or otherwise to reduce the risk assets, the denominator. Especially after the mid-1990s, banks tried to reduce the amount of loans outstanding. Banks resorted to the two approaches; namely "Reluctance to lend money" and "forced repayment" for this purpose. To uplift the numerator, they also sold off stocks in hand, cancelled reciprocal holding of stocks and increased their equity asset forcibly by the government injection of money. Such actions of banks received strong criticism of the market and not only the stock prices of the banks but also those of the entire stocks were plummeted. In spite of the efforts, at the end of 1990s, the quality of the banks' assets did not improve. The banks' ratio of public capital (forcibly injected by the government in the form of preferred stocks) and deferred income tax asset to the equity capital increased and the quality of equity capital was deteriorated.

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[30] The amount of non-performing loans in terms of "risk-management loans" disclosed by banks in Japan comes to approximately 30 trillion yen as of March 2000, which accounts for 6% of GDP in Japan. In terms of the definition provided by Financial Services Agency (a category based on the possibility of collecting credits), the total amount of bad loans held by banks in Japan is calculated as 63 trillion yen as of March 2000, which accounts for 12.8% of GDP.

From 1994 to 1995, a number of credit cooperatives and other small-sized financial institutions went bankrupt followed by the failure of housing loan companies. In 1997 and 1998, even large financial institutions went bankrupt and the crisis of financial system emerged abruptly. Credit crunch went further worsened in the process. While enthusiastically selling their loan products to low-risk well-performed companies, financial institutions further stood on "reluctance to lend money" and "forced repayment" to companies with management difficulties and even they forced them to repay outstanding balance of loans. Many SMEs suffered from the behavior of the banks, which made the government to take emergent policy measures to offer more guarantee and direct lending to SMEs.

(3) Financial Revitalization Program

Even after the year 2000, Japan was still under the prolonged recession and deflation, because of the slow write-off process of the non-performing loans. And non-financial firms still struggled against their excessive labor, plant and debts. In October 2002, the government announced the "Financial Revitalization Program", aiming at reducing to a half of non-performing loans held by major banks in 3 years by March 2005. After the announcement of the Program, major bank enthusiastically addressed with writing-off of their non-performing loans. As a result, the risk asset of major banks amounting to 27.6 trillion yen as of March 2002 was successfully reduced to almost a quarter i.e. 7.3 trillion yen as of March 2005, in part because of the economy of Japan on a gradual recovery. In terms of the ratio of bad loans to total loans, it refers to a decrease from 8.7% to 2.9%. The severe bad loan issues made a leap forward to normalization in 2005.

The feature of the Financial Revitalization Program lies on that it showed a new framework of financial administration in order to construct a robust financial system. The new financial administration in the Program can be summarized to the following three points: (i) stricter asset assessment, (ii) enrichment of equity capital, and (iii) strengthening corporate governance. In order to succeed in corporate revitalization efforts, companies as debtors must be also revitalized. In the Program, the government established the Industrial Revitalization Corporation of Japan (IRCJ) to revitalize collapsed companies in April 2003. IRCJ provided its assistance to 41 companies by March 2005, and the total borrowings made by IRCJ exceeded 4 trillion yen.

(4) Policies Ensuring the Lending to SMEs

During the post-bubble period, SMEs in particular received serious adverse impacts from the financial difficulty, in particular the credit crunch. The credit crunch to the SMEs became even worse after 2001, partly because the strong incentive applied to the banks to intensify their equity capital under the Financial Revitalization Program. The SMEs had little access to direct finance due to insufficient structures for disclosure and requirements for going public. The government took emergency policy measures to ensure the supply of funds to SMEs, including creation of a Safety-net Guarantee and Loan System[31] in December 2000, the Receivables-secured Loan Guarantee System in December 2001 and enforcement of the Refinancing Guarantee System for smooth funding in February 2003.

These policy measures by the government are one of the backgrounds for the establishment of the Credit Risk Database (CRD) of Japan. The database serve as a role of fundamental infrastructure for "quick loan" to be made available to the SMEs through the scoring method. Moreover, an experiential system will be constructed for SMEs to raise funds from the market through information disclosure as a method of direct finance, such as creation of the middle-risk bond market.

3-1-2   Basel Capital Accords and Financial Database in Japan

Another important factors on the background of the success of the database for SMEs is the implementation of the new capital accord. The introduction of the new accord alerted the smaller regional financial institutions, and led them to being interested in the new financial technologies, including the scoring models.

(1)   Basel Capital Accord I

With the liberalization of overseas capital mobility, massive funds move beyond the national boundaries in a moment. It becomes necessary to secure stability of the international financial market by preventing any distortion due to the difference of financial regulations among different nations. A common standard may help the international harmonization of the financial regulation. In addition, with various financial techniques being available, the conventional method of supervising banks becomes obsolete, and the capital adequacy requirement emerged as a replacement with the

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[31] With loans where small and medium enterprises use accounts receivable as collateral, a credit guarantee association endorses 90% of the amount financed.

conventional method of supervising banks. The capital adequacy requirement stands on such idea that banks should determine by themselves the degree of taking risks to improve their own equity asset, and that the supervisory authority should monitor the situation of the observance of the required capital-asset ratio of the bank. The *Basel Capital Accord* is the international standard proposed by Basel Committee on Banking Supervision, serving of the purposes.

The original *Basel Capital Accord*, BIS's capital-adequacy requirements (Basel I), settled on in 1988 became benchmarks of the financial regulation and the supervision of every country in the world. Basic concepts of Basel I are: (i) the bank is obligated to have the own capital worth at least 8% of the assets which are weighted according to the risk; (ii) When the ratio falls below 8%, the shareholder may maintain the control of the management on the condition that he should recover the equity ratio to the level of 8%; and (iii) If impossible, the control of the management of the bank is transferred to the regulatory agency. In order to globalize its financial services, Japan accepted the *Basel Capital Accord* in 1988 and in accordance to the Banking Law obligated banks to maintain the capital-asset ratio of 8% in risk asset basis in March 1993 or thereafter, if the banks are involved in international banking business. The Basel Capital Accord was revised to respond to the change of financial environments and the Basel II with more refined capital-asset ratio arrangement, was introduced at the end of FY2006 (or at the end of FY2007 for the criteria based on advanced methods).

The bank assets, denominator of the equity ratio, are weighted according to the risk. The assessment should be preferably made in the market value, but this is not enforced in Japan. The own capital, numerator of the equity ratio, consists of a part decided by the common rule (core capital and Tier I capital) and a part decided by a special rule in each country (supplementary capital and Tier II capitals). In Japan though, the capital adequacy requirements (so-called BIS's capital-adequacy requirements) based on the Accord were introduced in the term ended in March, 1993, the BIS's capital-adequacy requirements introduction in Japan was significantly deviated from the principle of the BIS's capital-adequacy requirements or the standards of Europe and America. And various accounting discretion was admitted from the start of the introduction of BIS's capital-adequacy requirements in Japan.

(2) Introduction of New BIS's Capital-Adequacy Requirements (Basel II) in Japan

Basel II was enforced in the term ended in March, 2007, in Japan; however, the

advanced method will be implemented in the term ended in March, 2008. About the first pillar (capital adequacy requirements), it should be maintained the same as Basel I. As for the bank of the uniform international standard (financial institution that has the overseas business base), 8% is assumed to be the minimum required equity ratio as it is decided in the final plan at Basel II. With regard to the domestic standard bank, 4% is assumed to be the minimum required equity ratio while complying with the final plan at Basel II.

The own capital that is the molecule for the minimum required equity ratio is the same as at present (Basel I), but the present credit risk and market risk plus the operational risk is added to the denominator. In the present regulation, the credit risk has only a single calculation method, but in the new regulation, the bank will select the suitable one for itself, either being the standard method (in which a part of the present regulation is amended), or the internal rating method (method to reflect the borrower's risk more precisely by using the rating within the bank). The newly added operational risk means the risk that a loss might be caused in a clerical work accident, system failure, and wrongdoing, and the bank will select the suitable one for itself, either being the method to make a measurement with the gross profit a criteria, or method to make a measurement based on the past actual losses. The Financial Services Agency explains that although the operational risk is added to the denominator, the entire burden will become almost the same as the present Basel I, as the credit risk will be mitigated mainly for SMEs and individuals.

About the second pillar (verification in the supervision), it is so determined that the bank first should understand the major risks, including such risks as interest rate risk for government bonds held by the bank accounts, confidence concentration risk, which are not the object of the first pillar (minimum required equity ratio), and then examine the own capital necessary for the management (integrated risk management by the financial institution), which the authorities monitor based on the early-warning system. The supervisory authority plans to pay attention to the propriety of the bank's own capital, especially when the amount of interest rate risk exceeds 20% of the total amount of the basic item (Tier 1) and the supplementary item (Tier 2).

About the third pillar (marketplace rule), based on the concept that the effectiveness of the marketplace rule should be enhanced through the fulfillment of the disclosure procedure, information disclosure is requested concerning equity ratio and its break-down, amount of each risk, and calculation method. Moreover, in principle, it has become necessary for the bank to make a quarterly disclosure and the biannual disclosure for the financial institution of cooperative organization.

Table 3-1: Risk weight of credit risk in Basel II (For a standard method)

<u>Standard method</u>

The risk weight has become more exquisite (extension of a present regulation).

(a)　In the small- and medium-sized enterprises and personal lending, the risk weight is reduced in consideration of the risk reduction effect by the petty loan's dispersion.

(b)　As for delinquent receivables, the risk weight is adjusted in proportion to the reserve rate.

(c)　The risk weight corresponding to the credit worthiness of the borrower enterprise can be used

Classification of credit facilities	Present regulation	New regulation
Government and local authorities	0%	0%
Government-affiliated agency	10%	10%(20%)
Bank and securities firm	20%	20%
Business corporation (Excluding small- and medium-sized enterprises)	100%	(According to rating) 20%–150%* Or, (Rating is not used) 100%, uniformly
Small- and medium-sized enterprises and individual	100%	75%
Housing loan	50%	35%
Delinquent receivables	100%	150%** (Reduced in proportion to the reserve rate)
Stocks	100%	100%

* Only the requested rating can be used for the rating of the business corporation.

** The delinquent receivable is the credit facility to a debtor whose payment is delayed for three months or more.

(Source) Financial Services Agency's homepage

(3)　Implication of the Basel Accord II on SMEs Financial Information Databases

The introduction of new accord have a significant impact to the lending of smaller banks, whose major customers are SMEs, as well as larger ones. The smaller banks, in particular, have paid more attention to the technically advanced risk evaluation methods. Recently, the scoring systems, backed by a huge accumulation of data on credit information, are intensively reviewed and introduced. This served as an important background for the demand for and success of the newly established CRD.

Moreover, the financial authorities in Japan generally welcomed and supported the introduction of new financial evaluation technology, expecting that the financial institutions take a more rational approach to be prudent and not too much relay on land as

collateral. With the reform of financial supervisory framework, more objective evaluation system may be more applicable to the new system of supervision. The establishment of the CRD, which obtained financial support from the government, evidenced the attitude of the authorities.

3-2. Challenges in Establishing Credit Information Database for SMEs

3-2-1 Characteristics of Financial Data on SMEs

The problem of asymmetric information between banks and borrowers is more acute in the case of SMEs. It is largely due to the special characteristics of SME financial data for the lenders to review the creditworthiness of the borrowers. The SMEs in Japan are characterized in the following three points, while the characteristics, in fact, are shared with the SMEs in many other countries both developed and developing.

1) SME data typically tend to be the "soft information" which is difficult to quantify and verity. For example, the information about the personal character and reliability of a SME's owner is important in judging credit risks. Banks can acquire such information through interviewing the owner of SMEs in detail. Relationship banking is another way to access to such information. But the information cannot be transferred or re-sale to other banks, nor be accumulated as an entry in standardized database.

2) In SME data, the availability of the so-called "hard information" such as balance sheets and profit and loss data is rather limited. Furthermore, such information tends to be inaccurate, partly because the management of SMEs do not understand well the accounting standards based on which financial data should be compiled, and partly because the accounting standards themselves are imperfect. The documents are frequently mixed with those of owners' households.

3) Many SMEs are more susceptible than larger firms to business fluctuations and economic shocks. Such information is not well incorporated in both soft and hard information of SMEs. For example, the sales of many SMEs tend to be in the form of receivables from the firms with special business relations (so called parent companies). If these firms with special relations go bankrupt, there will be a strong possibility that related SMEs will go bankrupt through the domino effect.

3-2-2 Free Rider Problem on Information

The free rider problem arises when economic entities try to reap the benefits of economic activity without bearing its costs. It is a typical case of market failure. While the financial sectors tend to suffer from the problem in general, the same kind of problem emerges in the construction of an information sharing system, particularly on SMEs. When constructing a new information sharing system, it is quite natural that the banks want to use the data of other banks, but they do not wish to provide the system with their own data. In the extreme case, no banks have the incentive to provide the data. This is a typical free rider problem, and presents a large obstacle to constructing a new information sharing system.

Furthermore, the free rider problem can become an obstacle to maintaining the database, increasing the amount of data and improving their quality. Generally, there is an uneven distribution of information between larger banks and smaller banks. Many smaller banks with little information have the strong incentive to provide their information to an information sharing organization to gain access to a larger pool of information. On the other hand, large banks would obtain little additional information by providing their information to such an organization so that they would either provide less information than otherwise or they would not participate in the information sharing mechanism at all.

The free rider problem can also become an obstacle to competitive pricing. Banks will use an information sharing mechanism so as to be able to overcome the problem of asymmetric information and to make more new loans. This stimulates competition, resulting in competitive pricing and reduction of the profitability of the loans to the same borrower by the existing banks. Thus, those banks, which have a large share of loans to a borrower and a lot of information about that borrower, have the incentive to provide less information about the borrower than otherwise to protect their informational advantage and profitability.

It is necessary to accumulate a large number of data to construct an accurate model to estimate the default probability of SMEs. As mentioned above, however, quite a few banks may feel less inclined to provide the information about borrowers because of the free rider problem. Therefore, it is difficult to construct an accurate model unless the free rider problem is solved.

The case of credit rating agencies also involves the free rider problem. Banks or investors will not use credit rating agencies unless these agencies have good reputation.

Banks and investors will use the information that credit rating agencies provide only if they are convinced that such information reflects borrowers' creditworthiness better than the information that they already have. To convince banks and investors and establish good reputation, credit rating agencies need to disclose the method by which they evaluate borrowers' creditworthiness. Such disclosure has the effect of positive external economies in the sense that other credit rating agencies can take advantage of the disclosed information and become free riders. For fear of the free rider problem, credit rating agencies are reluctant to disclose their method, which makes it difficult to establish good reputation particularly in the case of SMEs.

3-3. "Credit Risk Database" in Japan

3-3-1 What is the CRD?

The Credit Risk Database (CRD), which is managed by the CRD Association, is a huge database specifically designed to deal with the information regarding SMEs in Japan. As of the end of March 2006, the number of SME data reached 2,173,000 debtors, which accounted for 46 percent of all SME data in Japan. The number of collected financial statements in the database is somewhat more than 9.8 million. The database encompasses long-term time series data since 1995: some 50 % of corporation data contain a time series with the length of five years or more, and 50% of the data of sole proprietor, three years or more. The data are being coded according to Japan Standard Industry Classification Code. The CRD Association plans to improve the quality of the database with more accuracy and wider and longer coverage of the data. The CRD is a successful case of establishing an information sharing system in Japan. Understanding its success provides useful experience for developing and transition economies to strengthen financial infrastructure geared to assisting SME financing.

In its origin, the Credit Risk Database Management Council (later transformed into the Credit Risk Database Association) was established jointly by 52 Credit Guarantee Corporations (CGCs)[32] and a number of both private and public financial institutions in March 2001. The establishment was under the guidance of the Ministry of

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[32] Credit Guarantee Corporations are public institutions established under the Credit Guarantee Corporation Laws. They were established to make it easier fro SMEs to raise funds from financial institutions by providing guarantees on business loans. The government of Japan actively utilized the function of the Corporation in implementing the emergency measures to finance the SMEs in the period when the banks stood on the reluctance to lend.

Economy, Trade and Industry (METI) of Japan and the Small and Medium Enterprise Agency (SMEA) to strengthen the financial infrastructure, particularly for the SME finance. Its membership increased dramatically: from 73 institutions in Fiscal 2001 to 203 institutions in the mid of Fiscal 2007 (Table 3-1). It employs three directors in management and 24 staffs.

Table 3-1: Members of the CRD

	2001	2002	2003	2004	2005	2006	2007
Credit Guranntee Corp.	52	52	52	52	52	52	52
Large City Banks	3	4	6	6	8	9	9
Local Banks	1	4	12	23	27	38	39
2nd-tier Local Banks	11	12	15	19	25	28	29
Financial Cooperatives	3	5	16	24	32	44	47
Credit Unions	0	0	1	1	2	6	7
Credit Rating Agencies etc.	0	0	1	6	11	10	10
Public Institutions	3	4	9	10	14	10	10
Total	73	81	112	141	171	197	203

(Note) As of the mid of fiscal years.

The CRD Association received active support not only from the private sector (members), but also from the public sector, which greatly contributed to its success. The CGCs, which had collected a vast accumulation of financial data of SMEs, provided CRD with access to their own data. This considerably reduced the information free rider problems. In addition, the government and other public institutions have provided various services and convenience. For example, the SMEA made the representative of the CRD Association a member of various government councils, which in turn gave the CRD Association an opportunity to promote its activity to attract more private members. The CGCs and private financial institutions officially used the credit information of the CRD Association when they created the joint credit guarantee scheme.

Another important contribution from the public sector to the success of the CRD was to pay the fixed costs for the basic facilities for the CRD. Before the CRD was formally established, the government invested 1.3 billion yen from the supplementary budgets for fiscal 1999 and 2000 to construct the CRD computer system, which is the fundamentally important facility for the information database. This is a huge investment project compared with the profit of the CRD Association (losses for fiscal 2001 and 2002, and the profit of 14 million yen for fiscal 2004) or its accumulated reserves of 43 million yen at the end of March 2005. It is clear that such an investment was only possible with the support from the public sector.

Human resources are also an important factor in creating information sharing

mechanisms. For these mechanisms to function effectively, the confidence in the mechanisms from the members, as well as general public, is critical. These mechanisms should be managed by the people with the dedication toward public policy and the knowledge about market mechanisms to build the confidence. The CRD Association in Japan has been headed and managed by the person who used to be working at the central bank and happens to possess these qualifications, which to a substantial degree has contributed to its success.

3-3-2   How Does the CRD Work?

The CRD Association collects SME data, which are contributed from the CGCs and its member financial institutions, such as local banks, financial cooperatives and credit unions. The data include: financial data, such as balance sheet and profit and loss data; non-financial data, such as the year of establishment, the possession of real estates, and the age of CEO; and the history of default data of borrowers. The selection of financial data would have an important implication on the service of the CRD. As indicated in detail below, one of the core services of the CRD is the development and provision of access to its scoring models. The data should, therefore, reflect the needs for building and maintaining the model. The examples of the items of the data collected by the CRD is listed in Table 2-2 (1) and (2) This example include about 70 items, representing the most important financial indicators to evaluate the creditworthiness of the SMEs.

Table 3-2 (1): Items of Financial Data Collected by the CRD

1	Sales
2	Operating profits
3	Ordinary profits
4	Investment in plant and equipment
5	Investment in P&E (excluding investment in software)
6	Increase in inventories
7	Ratio of operating profits to sales
8	Ratio of ordinary profits to sales
9	Ratio of net worth
10	Liquid assets
11	Inventories
12	Fixed assets
13	Deferred assets
14	Total assets
15	Liquid liabilities
16	Fixed liabilities
17	Net assets
18	Sales
19	Interest expense
20	Personnel expenses

Table 3-2 (2): Sub-division of the Items

10	Liquid assets	
	＠Cash and deposits	
	＠Bills and accounts receivable	
	＠Securities	
	＠＠＠Stocks	
	＠＠＠Bonds and debentures	
	＠＠＠Other securities	
11	Inventories	
	Finished goods and merchandise	
	Works in process	
	Raw materials and supplies	
	Other liquid assets	
12	Fixed assets	
13	Deferred assets	
14	Total assets	
15	Liquid liabilities	
	＠Bills and accounts payable	
	＠Short-term borrowings	
	＠＠＠Borrowings from financial institutions	
	＠＠＠Borrowings from others	
	＠Allowance	
	＠Other liquid liabilities	
16	Fixed liabilities	
	＠Bonds	
	＠Long-term borrowings	
	＠＠＠Borrowings from financial institutions	
	＠＠＠Borrowings from others	
	＠Allowance	
	＠Other liquid liabilities	
	Reserve required by special law	
17	Net assets	
	＠Shareholder's equity	
	＠＠Capital stock	
	＠Capital surplus	
	＠Earned surplus	
	＠Treasury stock	
	＠Others	
	＠Subscription rights to shares	
	Liabilities and net assets	
	Bills receivable discounted outstanding	
18	Sales	
	Cost of sales	
	Selling and general administration expenses	
	＠Operating profits	
	Interest received	
	Other non-operating revenue	
19	Interest expense	
	Other non-operating expense	
	＠Ordinary profits	
20	Personnel expenses	
	＠Directors' remuneration	
	＠Bonus for directors	
	＠Salaries and wages	
	＠Bonus for employees	
	＠Welfare expense	
	Number of staffs (1.00 persons)	
	＠Number of directors	
	＠Number of employees	

After building the database, the CRD Association provides its member

institutions with i) statistical information services, ii) sample data services, and iii) scoring services. In statistical information services, the CRD Association uses its database to produce reference indicators for two groups of SMEs: i.e. defaulting and non-defaulting. The reference indicators include profitability indices, safety indices and growth indices. The CRD Association provides its member financial institutions with such indices. The members can refer to the indicators, when evaluating the creditworthiness of their own borrowers. In sample data services, the CRD Association provides the original financial data in an anonymous form so that member financial institutions can use them when constructing their own scoring models. In scoring services, the CRD Association offers its credit-scoring model with which member financial institutions can estimate the default risk of borrowers.

As the CRD Association collects credit information about SMEs and makes it available to its members, it plays a role as a kind of private credit bureau. Furthermore, it can evaluate the creditworthiness of potential borrowers by the credit scoring model, thus serving as a kind of credit rating agency for SME financing in Japan. The unique feature of the CRD in Japan would provide a good practice and experience to the construction and development of database in other countries of East Asia.

3-3-3   CRD Scoring Model

(1)   Structure of the Scoring Model of the CRD

The credit scoring model is a statistical method of evaluating the credit risk of potential borrowers. It is quick, cheap, and objective in loan evaluation. The CRD model calculates credit scores and the probability of default by using the balance sheet, and profit and loss data. The CRD model, being a standard logit type of statistical model, uses 91 items for corporations and 69 items for proprietors.

If we plot the profit to sales ratio and cash and deposit to total loan ratio against the default ratio, respectively, we observe the following facts. (Figure 3-1)   First, the profit to sales ratio is weakly correlated with default. Second, cash and deposit to total loan ratio is negatively correlated with default. Based on such observation, the CRD model selects 29 variables and calculates the "Overall Default Index," which is the key index for predicting the logit model. This Overall Default Index is useful in the sense that it can be calculated even when some financial data are missing, which often happens in the case of SMEs.

Figure 3-1: Effective Variables in CRD for Predicting Default

Ordinary profit to Sales ratio

Unit:	Classification
less than -3	0
-3.0　-1.0	1
-1.0　-0.5	2
-0.5　-0.2	3
-0.2　0.0	4
0.0　0.2	5
0.2　0.5	6
0.5　1.0	7
1.0　3.0	8
3.0　5.0	9
5.0 or more	10

Cash and deposit to Total loan ratio

Unit:	Classification
less than 5	0
5　10	1
10　15	2
15　20	3
20　25	4
25　30	5
30　40	6
40　50	7
50　70	8
70　100	9
100 or more	10
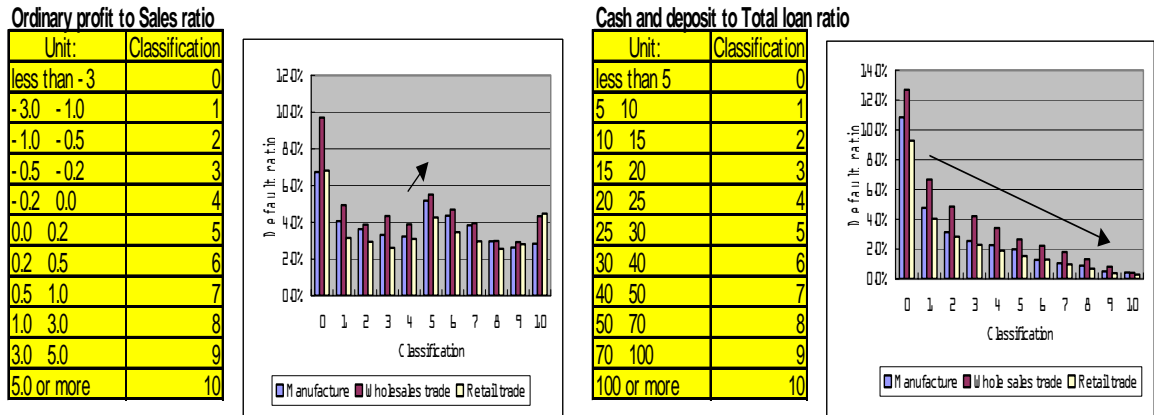
(Source) Credit Risk Database Association in Japan.

In loan evaluation, for example, the credit scoring model and the Overall Default Index enable banks to screen borrowers, classifying them into two groups before they make evaluation: one group of borrowers which needs close scrutiny, and the other group which needs simple evaluation only. Banks will be able to significantly reduce the evaluation cost by focusing on the group of borrowers which requires closer scrutiny. This leads to not only cost reduction but also a streamlining of the allocation of human resources.

(2)　Reliability of SME Data

The financial documents of SMEs tend of be biased, reflecting their purposes of the usage. In general, the data in profit-loss statements are biased. For example, the profit data submitted to the tax office tend to be lower with the obvious reason under the reporting principal of tax in Japan, while those submitted to the banks tend to be higher to make their financial conditions look attractive. This also reflects the convention in Japan that the book-keeping exercises of the SMEs are enforced and developed for the purpose of tax reporting.

The data in the balance sheets tend to be comparatively more accurate. The amounts of lending, because they are recorded and reported from the lending financial institutions, are very accurate. In addition to rely on the comparatively accurate items, it is frequently the case that the differences and rates of changes in the financial data reflect quite accurately the changes of the financial conditions. Even if the level data are biased,

their difference may erase and offset the bias, as long as the biases themselves are maintained at more or less similar levels. In large population, the law of large numbers justifies the methodology, and the huge accumulation of financial data enables such analysis. The analysis has significantly improve the reliability of the data, and contributed to construction of the scoring model with good performance.

(3) Model Reliability

The CRD accumulated a huge database with the support of CGCs, and with such database succeeded in constructing a practically accurate model for default. The average probability of default predicted by the CRD model turned out to be quite close to the actual default ratio (Figure 3-2). Thus, the CRD Association has increasingly gained good reputation. Yet the CRD model needs to be further improved by accumulating more "soft information" and incorporating the effect of economic shocks and bankruptcies through chain reaction.

Figure 3-2: Reliability of CRD Model

Financial Statements in 2002

Rank	Probability of default	Number of statement	Average Probability of default	Within the year Number of default	Default ratio
1	less than 0.2	64,798	0.14%	85	0.13%
2	0.2 0.4	118,906	0.30%	277	0.23%
3	0.4 0.6	89,574	0.49%	378	0.42%
4	0.6 0.8	66,488	0.70%	370	0.56%
5	0.8 1.0	50,976	0.90%	434	0.85%
6	1.0 1.5	87,932	1.23%	996	1.13%
7	1.5 2.0	55,514	1.73%	924	1.66%
8	2.0 3.0	64,012	2.44%	1666	2.60%
9	3.0 5.0	55,145	3.83%	2326	4.22%
10	5.0 or more	49,139	9.19%	4534	9.23%
	Total	702,484	1.71%	11,990	1.71%

Probability of default   The avarage probability of default within 1 year estimeted by CRD model 2
Number of default   Total number of default firms collected from CRD menber

Financial Statements in 2002
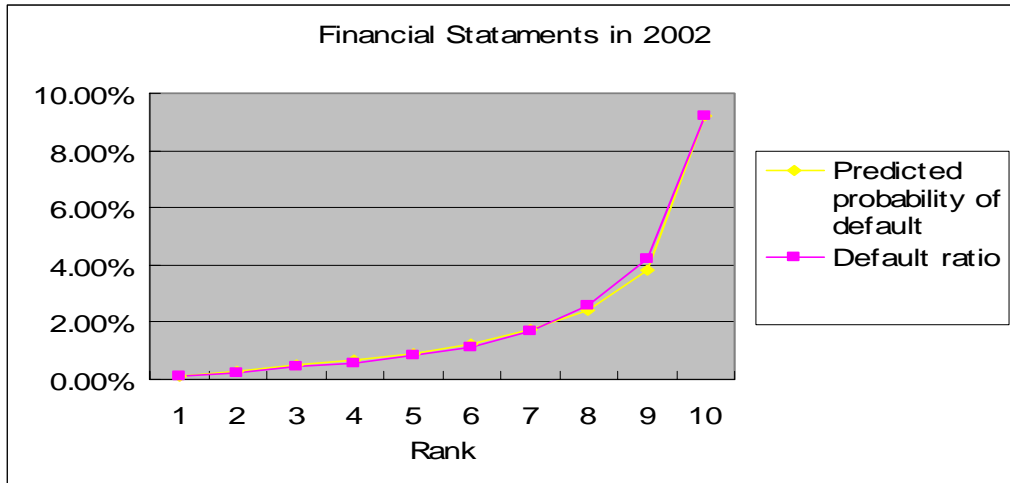
(Source) Credit Risk Database Association.

3-3-4   Problems Encountered When Establishing the CRD

The CRD Association encountered several problems at its inception. First, collecting SME data from member banks was not easy. Member banks were reluctant to want to provide the CRD Association with non-anonymous financial data. Even if the CRD Association compiled the data in an anonymous fashion, many of them were still reluctant to provide the financial data of their borrowers. Therefore, the CRD Association had to obtain strong support from the CGCs, which are the public associations in collecting data in the regions of Japan. While the individual banks do provide the data now, over 70 percent of financial data in the CRD Association come from the CGCs. Without the cooperation of the CGCs in each prefecture, the CRD could not have solved the free rider problem and therefore could not have constructed such a huge database.

Second, maintaining the security of database is important. If non-CRD members can gain an easy access to the database, the CRD members will lose their incentive to supply their financial data about SMEs to the CRD for the fear of the free rider problem. Therefore, the CRD Association has prioritized the information security, making utmost efforts to establish and maintain the technical security system for protecting the database collected from the CRD members and to make a code of conduct.

Third, the CRD Association lacked reputation at the beginning. Many bankers and policymakers first thought that since financial data on SMEs by nature were not reliable for estimating credit scores, the CRD Association could not be the reliable

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database and the CRD model could not evaluate the creditworthiness of borrowers with accuracy. However, as shown in the previous section, the CRD model performed well. This led to the higher and rising reputation of the CRD model, which was reflected by the increase of membership.

Fourth, the cost of establishing the CRD was high, if including the fixed costs for information system. As previously described, it was clear that the CRD Association needed huge funds for constructing the computer infrastructure even before it began its operation. No other institutions except for the government could have provided such funds for the fixed costs.

3-4.　Conclusion and Further Issues to be addressed

3-4-1　Conclusion and Issues for the CRD

This Chapter highlighted the usefulness of a semi-private and semi-public organization to construct the credit risk database in SME financing as an information sharing mechanism by using the CRD Association in Japan as an example.

The success of information sharing mechanisms critically depends on the size of database. The larger the size of database, the more reliable the credit scoring and default index, and the more useful and effective an information sharing mechanism becomes. As can be seen from the experience of the CRD Association in Japan, the active support and involvement of the public sector at an early stage is the key to the successful construction of database.

Equally important is to establish confidence in the organization. It goes without saying that the best way to do so is to build a good track record. In this process, the integrity of the organization plays an important role. The organization should be managed by the people with strong dedication to public policy and deep knowledge about banking and market mechanisms. In creating the information sharing mechanisms, transition economies should pay as much attention to the human factor as to infrastructure such as database.

The SME database of the CRD may have larger and diversified scopes of the usage in the future. The Credit Guarantee Corporations introduced flexible guarantee charge rates system, under which the SMEs with less probability to default will entertain lower rates of guarantee charges. Some of the CRD models are stipulated in the notification of METI as credit risk measurement models. The CRD provides training

sessions for the CRD models as their services to the members. The official supports in this regard would help the CRD to further develop their functions.

(Appendix to Chapter 3)   Characteristics of SMEs in Japan[33] - An Analysis from CRD Database

The Small and Medium-sized Enterprises (SMEs) are invariably important as in the economic activities in almost all the countries in the world. Indeed, 99 percent of the incorporated companies are SMEs in Japan, the United States and the United Kingdom. Despite their importance, a lack of reliable data has prevented the formation of common understanding on the perspectives on the SMEs. The CRD database recently becomes popular for its ability to avail the researchers of making analysis on the financial conditions of the SMEs of Japan.

(1)   Numbers, Sectors and Finance of SMEs in Japan

The Basic Law of Small- and Medium-seized Enterprises in Japan, amended in 1999, defines the SMEs as the enterprises with equal to or less than 300 million yen of capital, or those with equal to or less than 300 employees. Before the amendment, the Basic Law had consider the SMEs as the vulnerable to be protected, and aimed at reducing the gap between them and the larger enterprises in wage and productivities. However, the amendment in 1999 completely switched its objectives, abolishing the idea of the vulnerable and putting priority to support their self-help. In the area of finance, the Basic Law put an objective to widen the financial access to direct finance.

Two characteristics merit attention. First, the smaller enterprises far outnumber the larger SMEs in Japan. There are 1.6 million incorporated SMEs in Japan, 86% of which are those with less than 20 employees. Second, SMEs in service sectors are dominant. Among the sectors, 35% are commerce and restaurants, followed by construction (19%), manufacturing (18%), and services (17%).

The finance of SMEs is generally limited to the bank lending. Informal finance was merged into the formal banking system in 1930s. The banks and financial cooperatives (Shinkin Banks and Shinyo Kumiai Banks) mainly supply finance to the

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[33] This Annex is an excerpt from "Management and Financial Conditions of the SMEs in Japan – Analysis from CRD Database" (written in Japanese) by Prof. Yoshiaki Shikano.

SMEs. Especially smaller enterprises heavily rely on the lending from financial cooperatives. The lending amounts to 40% of total assets for the SMEs. In Japan, lending from public financial institutions also play an important role in financing SMEs. Their lending to SMEs constitutes 10% of total assets of the SMEs.

(2) Snapshot of SMEs in Japan

The following analysis relies on the CRD database, which accumulates the financial data of more than 2 million financial statements. The CRD database covers 560 thousand enterprises (or about 35%) out of 1.6 million incorporated SMEs in Japan[34]. The distributions of the number of employees and sectors in the CRD database are generally similar to those of national survey data. This may justify that the CRD data correctly characterize the SMEs in Japan.

Table 3-3: The Snapshot of SMEs in Japan in 2003
(Values of Median)

	Number	Employees	Total Asset	Capital	Total Sales	Operating Profit
SMEs	565,730	6	85	10	125	1.04
Construction	131,825	6	67	10	112	0.86
Manufacturing	125,064	9	116	10	137	1.81
Wholesale	79,269	5	129	10	235	1.54
Retail	75,323	4	63	6	117	0.16
Listed Companies	3,750	405	23,914	2,626	21,989	767
Construction	243	642	35,208	3,000	40,936	763
Manufacturing	1,737	465	26,493	3,396	21,041	706
Trading	438	302	23,408	2,229	33,904	698
Retail	285	549	24,813	2,467	46,646	1,301

(Note) Unit is million yen, except for numbers and employees.

Table 3-3 illustrates the "snapshot" of the SMEs in Japan, taking median of the data from the CRD database. The magnitude of the SMEs in Japan is tiny with only six employees, the total asset of 85 million yen (about US$770 thousand), and the annual sales of 125 million yen (US$1.1 million). The listed companies recorded much larger

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[34] The CRD database only includes the enterprises that borrow from financial institutions. Therefore, there is some sample bias.

figures. The amount of capital of SMEs was equal to the minimum requirement in the Commercial Code in Japan (10 million yen in 2003), implying that the level of capital of SMEs was excessively low.

The profit and loss of SMEs, represented by operating profit in Table 3-3, shows that the profitability of SMEs is very low, compared to the larger listed companies. This is also true in terms of per employee. The operating profit per employee of SMEs is 170 thousand yen, compared to that of the listed companies, 1.89 million yen (about ten times). The indicators characterize the SMEs in Japan that the sales of SMEs are generally very small, and that the costs are disproportionately large to sales, resulting in low profitability. This high-cost nature of the SMEs in Japan is attributable to high labor and administration costs.

One of the factors for the high-cost nature is the tax system in Japan. The owners of the corporation can intentionally reduce the profit to zero by paying wages to themselves and other expenditures. The wages to the owners are still tax-deductible. The expenditures are often used for the owners' households, but disguised as the costs for the business. Such bias works as an incentive for the owners to reduce the profits of their corporation to zero, as long as the corporation is financially viable. This is ensured, because the banks continued lending as long as the collateral, usually meaning land, is intact. The incentive, however, led the SMEs to wasteful expenditures, and the high-cost nature materialized and sustained.

(3)   Characteristics in SMEs Finance in Japan

Several points are observed as characteristics of the finance to SMEs in Japan. Excessively small capital co-exists with excessively large lending for SMEs. Lending to SMEs amounts to about 60% of total assets at their median. Long-term lending constitutes 60% of the total debts. In Japan, the bank lending has traditionally worked as a "quasi-capital" for the SMEs. The equity ratio is larger for the larger enterprises. The larger equity ratio implies less degree of reliance to the bank lending. The major customers of SMEs in Japan are traditionally the larger firms with longer-term relations. Reflecting this, the amounts of account receivable are larger than those of account payable.

The excessively small equity capital in the SMEs of Japan is unique in the world. For example, the SMEs in the United States normally face difficulty in borrowing from the banks, and this has led to their higher capital ratio at about 40%. In Japan, the banks

are active in lending to the SMEs, and the public financial institutions directly provide the SMEs with access to lending, In addition, the Credit Guarantee Corporations (CGCs) provide guarantee to the lending. However, the SMEs, except for some ventures, are isolated from the capital markets.

There exists a considerable bias from the corporation taxation system in Japan, which seriously affects the financial management of the SMEs. Under the present system, individual business owners may save the tax payment by "upgrading to corporations." Once them become corporations, many items of expenditures, including wages, household-related expenses and interest payments, virtually become tax- deductible costs. This works as the major factor to the differences of financial management in terms of the magnitude of companies.

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Chapter 4
Database of Credit Information in ASEAN

4-1. The Present Status of Credit Information in ASEAN plus Three

     The World Bank conducts annual studies that measure, for many countries, a number of aspects of doing business; the study project is called "Doing Business" and provides useful macro-level data for both longitudinal and cross-sectional analysis. What is most useful for our present purposes is the portion of the study that takes up the relative ease of getting credit; this also includes data on the percentage of public and of private credit registry coverage of the adult population. The data can be used via the Doing Business website and simulation of the results of change in the component variables is possible. [35] A summary of current (2006) "Getting Credit" (measures of credit information sharing and the legal rights of borrowers and lenders) scores for the ASEAN+3 economies (and Hong Kong) is given below (see Table 4-1). "Protecting Investors" data is included for reference as the "Disclosure Index" scores are relevant for the improvement of credit data quality.

Table 4-1: World Bank "Doing Business" Scores for Credit

Selected Asian Economies and China, Japan and Korea

Economy	"Getting Credit"				Reference: From "Protecting Investors"
	Credit Inform-ation Index	Legal Rights Index	Sum getting credit	Ease of getting credit (percentile)	Disclosure Index
Thailand	5	5	10	0.40	10
Malaysia	6	8	14	0.07	10
Indonesia	3	5	8	0.60	9
Taiwan	5	4	9	0.53	7
Brunei	0	6	6	0.80	3
Vietnam	3	6	9	0.53	6
Philippines	3	3	6	0.80	1
Cambodia	0	0	0	1.00	5

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[35] See the simulator at http://www.doingbusiness.org/features/rankingsimulator.aspx.

Lao PDR	0	2	2	0.93	0
Singapore	4	9	13	0.13	10
Hong Kong	5	10	15	0.00	10
Japan	6	6	12	0.20	7
Korea	5	5	10	0.40	7
China	4	3	7	0.67	10

(Source: World Bank)

The Getting Credit Indexes for four ASEAN economies (Indonesia, Malaysia, Thailand, Singapore) indicate that the environment of getting credit in the countries is generally comparable to those in Japan and Korea, the two of the "plus three" nations with the best developed information infrastructure, most developed financial markets, and greater experience in regard to credit databases.

The components of the Credit Information System score are as follows (see Table 4-2).

Table 4-2   Features of the Credit Information Index (2006)

Credit Information Index	**Indicator: 2**
Are both individuals and firms listed in credit registry?	Yes
Are both positive and negative data distributed?	Yes
Does the registry collect credit information from financial institutions as well as retailers and utilities providers?	No
Are more than 2 years of historical credit information available for distribution?	No
Is data on all loans larger then 1% of income per capita recorded?	No
Is it guaranteed by law that borrowers can inspect their data?	No

(Source) World Bank

The Getting Credit components, for the most recent three years and for selected ASEAN members are provided in Table 4-3, providing details of national credit information for six East Asian nations, for 2005-2007. The high rank of Malaysia stands out.

Table 4-3   "Getting Credit" in Selected East Asian Nations, 2005-2007

Economy	Year	Ease of Doing Business Rank	Getting Credit				
			Rank	Legal Rights Index	Credit Information Index	Public registry coverage (% adults)	Private bureau coverage (% adults)
Indonesia	2005	..	..	5	2	0.0	0.1
Indonesia	2006	..	62	5	3	8.4	0.2
Indonesia	2007	123	68	5	3	20.5	0.2
Malaysia	2005	..	..	8	6	33.7	N.A.
Malaysia	2006	..	3	8	6	42.2	N.A.
Malaysia	2007	24	3	8	6	44.5	N.A.
Philippines	2005	..	..	3	3	0.0	3.7
Philippines	2006	..	94	3	3	0.0	4.8
Philippines	2007	133	97	3	3	0.0	5.5
Taiwan	2005	..	..	4	5	0.0	57.1
Taiwan	2006	..	45	4	5	0.0	59.5
Taiwan	2007	50	48	4	5	0.0	67.1
Thailand	2005	..	..	5	4	0.0	18.4
Thailand	2006	..	32	5	5	0.0	21.7
Thailand	2007	15	36	5	5	0.0	27.9
Vietnam	2005	..	..	4	3	1.1	0.0
Vietnam	2006	..	80	4	3	2.7	0.0
Vietnam	2007	91	48	6	3	9.2	0.0

Notes*:*

1. Doing Business *2007* rankings are being recalculated to reflect changes in the methodology (see http://www.doingbusiness.org/MethodologySurveys/methodologynote.aspx) and the addition of three new countries.

2. Public credit registry coverage: The public credit registry coverage indicator reports the number of individuals and firms listed in a public credit registry with current information on repayment history, unpaid debts or credit outstanding. The number is expressed as a percentage of the adult population. A public credit registry is defined as a database managed by the public sector, usually by the central bank or the superintendent of banks, who collects information on the creditworthiness of borrowers (persons or businesses) in the financial system and makes it available to financial institutions. If no public registry operates, the coverage value is 0.

3. Private credit bureau coverage: The private credit bureau coverage indicator reports the number of individuals and

We restate data from Table 4-3 to seek a pattern for comparison with other data; the results are as follows. (Table 4-4)

Table 4-4 Rank, "Getting Credit" Indexes Selected East Asian Nations, 2007					
Legal Rights (Score)			Credit Information (Score)		
1.	Malaysia	(8)	1.	Malaysia	(6)
2.	Viet Nam	(6)	2.	Taiwan	(5)
3.	Thailand	(5)	2.	Thailand	(5)
3.	Indonesia	(5)	4.	Philippines	(3)
5.	Taiwan	(4)	4.	Indonesia	(3)
6.	Philippines	(3)	4.	Viet Nam	(3)
Source: Same as Table 4-2					

Moreover, the World Bank aggregates the data for ten topics including credit information, bankruptcy, corporate governance and enforcement of contracts to determine position and thereby national rank of nations in "ease of doing business;" currently in the Asian region, comparing countries to the "global best," Singapore is No. 1, top ranked globally; Thailand is 18th, Korea 23rd, and Malaysia 25th.[36]

4-2.   The State of Credit Information System in Selected ASEAN Countries

Recognizing the overall positive impact of information sharing on financial health and credit development, credit bureaus have made their inroads into most of Asia. Chakravarti and Chea (2005) feature the evolution of credit bureaus in Asia-Pacific countries including India. In 2004, the World Bank (2004) held a conference involving credit bureaus in South Asia including credit bureaus in Bangladesh, India, Nepal, Pakistan and Sri Lanka. In a region that has successfully recovered from the whiplash of the Asian financial crisis a decade ago, credit bureau development in the region remain challenged by the shadow of skepticism from both lenders and borrowers. The overriding negative sentiment is skewed towards the issue of privacy intrusion and the general usability and efficiency of the bureau. This section will look into how credit bureaus are faring in ASEAN region by featuring their operations in selected Asian countries.

4-2-1   Credit Bureau Development in Malaysia

The establishment of the Credit Bureau (in operation since 1982) by the Bank Negara Malaysia under the Central Bank of Malaysia Act 1958 is in line with its primary

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[36] World Bank and International Financial Corporation, *Doing Business 2007 / How to Reform*, presentation at http://www.businessenvironment.org/dyn/be/docs/132/Day1PlenaryMcLiesh.pdf, p. 2.

central bank function "to regulate and supervise financial institutions to ensure the soundness and stability of the financial system." As the primary financial regulatory authority, Bank Negara Malaysia promotes prudent credit policies and professionalism among the financial institutions, including the adoption of best business practices in credit risk management. One way of doing this is by providing credit bureau services to banks and other lending institutions so that they can make faster and better-informed lending decisions. This institution has a clear understanding of the merit of positive and negative bureaus and they take considerable effort to educate both general public and the users of the bureau.

Most information of the Credit Bureau was negative until 2002 when positive information was launched at the same time as in Singapore. Malaysia's database is admirable—in terms of credit information structure and depth, it is one of the best in the region. It collects only credit information of borrowers including private individuals, businesses (sole proprietorships and partnerships), companies and even government entities. However, it does not hold any information on deposits or the investment portfolio of any individual or corporation.

The information it collects is sourced from more than 50 financial institutions in Malaysia. These include all licensed commercial banks, Islamic banks, finance companies, merchant banks and several other financial institutions. Reference information on the particulars of borrowers is sourced from the National Registration Department (Jabatan Pendaftaran Negara) and the Companies Commission of Malaysia (Suruhanjaya Syarikat Malaysia) for the purpose of verification of particulars provided by financial institutions. The data provided is also updated on a regular basis. Because it is publicly owned, financial institutions are compelled by the BNM to report to the Credit Bureau the following types of data: personal particulars of borrower such as name, identification number, address, etc; and credit account details such as type of credit facilities, credit limit, outstanding balance, conduct of account and legal action status, if any.

The Credit Bureau produces the following reports: (a) *Summary of Credit Report* which has information on the total credit exposure of the borrower; (b) **Detailed Credit Report** which has information on specific outstanding credit facilities and new credit applications of a borrower; (c) *Motor Vehicle Report* which has information on motor vehicles used as collateral for credit facilities; and (d*) Customer Supplementary Information Report* which has information on the addresses, telephone numbers, employers' names and occupations of the customer for the last 3 years. A proposal from

Bank Negara Malaysia to also include written-off, written-down and partial written-off accounts' information in the credit bureau report is also being considered.

In addition to consumer bureau, **Info Credit D&B (Malaysia)** provide commercial credit reports, receivables management and consultancy services in Malaysia.[37] Chakravarti and Chea (2005) consider the credit bureau development approach taken by Malaysia is one of the best in the region.   As of 2005, BNM has not yet allowed the development of industry bureau score.

4-2-2   Credit Bureau Development in Singapore

Credit bureau development in Singapore has consistently been ranked high. Doing Business 2008 gave its legal rights index to getting credit data a rating of 9 (out of 10), a rating it has maintained since 2006. Its private bureau coverage is 42.7% of adults in 2007. In terms of benchmarking for getting credit regulations, it is ranked 7 overall, with UK as #1 followed by Hong Kong, China, Germany and Australia.

Credit Bureau Singapore Pte Ltd (CBS) is Singapore's first consumer credit bureau. This is an initiative driven by the Association of Banks in Singapore (ABS) and is a joint venture between ABS and DBIC Holdings Pte Ltd. The Consumer Credit Bureau was set up to move in line with the vision of the Monetary Authority of Singapore to enhance its risk management capability by helping credit providers make better lending decisions quickly and more objectively. It began operations in October 2002. Its mission is to assist members in their credit approval process and at the same time, protect every consumer's credit profile, by providing objective and factual information collated from members. It has committed itself to information accuracy and integrity, moral and ethical data-handling standards, customer-oriented, unparalleled service and operational credibility.[38]

The information found on its credit reports include: basic personal profile details, records of all credit checks made on the customer, latest 12 months repayment trend showing the promptness of payments relative to their due dates (no amounts displayed), any records of default, and any record of bankruptcy. The following information is excluded: credit limit(s); amount of loan(s) granted; monthly repayment(s) required;

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[37] Baycorp Advantage has a substantial shareholding in Infocredit D&B Pte Limited – a joint venture between Infocredit Holdings Pte Limited and Dun and Bradstreet 9Malaysia) Pte. Limited. For the consumer credit bureau, Baycorp also provided the technical report.
[38] This information was obtained from the website of Credit Bureau Singapore.

actual amount(s) repaid each month; salary of the customer; amount(s) deposited with the bank; value of assets mortgaged; net worth of individual and investment(s) made through the bank or financial institution.

Though Singapore and Malaysia launched their bureau information sharing process almost simultaneously, Malaysia is far superior in terms of information structure and depth. For Singapore, lack of depth of the information poses the risk of lack of predictability and usefulness of the data. One of the reasons could be that Singapore's small population: the customer pool (population 4.4 million) is limited and hence there is a protectionist attitude of the participating financial institutions, which prevents them from sharing too much information. As history has proven again and again, the more transparent the information sharing in the bureau, the more beneficial it is for the lenders, borrowers and the economy. It will be interesting to see whether Singapore bureau evolves to a stage where it possesses more depth and holistic structure. Currently under CBS umbrella, Trans Union is assisting Baycorp Advantage in the score development, which will be released soon. Independently, DP-FICO collaboration is working towards another score development here. Unlike Malaysia, there is no restriction on the score process development in this country (Chakravarti and Chea (2005)).

Another Singaporean consumer credit bureau is **CreditScan** that was launched in 2003. CreditScan specializes in collecting and selling negative information to retailers, hospitals, utilities, non-bank card companies and others.

Singapore's SME credit bureau was launched in September 2005. It boasts of having a 'live' online database but reception to it has been relatively lukewarm since DBS is the only major bank planning to link up to it and banks in Singapore are less willing to make use of data supplied by third party vendors.[39] This live database stores credit histories of local enterprises to allow banks to retrieve credit reports that are updated instantly. Two kinds of credit reports are generated – a basic commercial report and an enhanced commercial report that contains two risk indices developed by Inforcredit Dun and Bradsheet (D&B). The first index is called Paydex, a single numerical value computed based on the sized and promptness of loan payments that reflects a company's payment behavior. The second index is called the New Credit Risk Index that assesses various aspects of an enterprise such as its financial information and company size, and assigns it a risk class indicating the business failure rate in that class.

4-2-3 Credit Bureau Development in Thailand

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[39] Taken from http://www.profitera.com/article.php?story=20060317102047924.

The Memorandum of Understanding on the merger of Thai Credit Bureau (TCB) and Central Credit Information Services (CCIS) was signed on August 19, 2004. The objectives of the merger are to help these organizations reduce redundant work, combine their credit information files into one source for more complete information and tighter risk management. National Credit Bureau (NCB)[40] was formed and started credit bureau services in June 2005.

Both these credit bureaus started services about the same time in early 2000. However, the Credit Information Business Act was only drafter by the Central Bank in early 2000 and went into effect on March 14, 2003. Legal issues regarding the existing operation of these credit bureaus arose and the members, board of directors and management of both credit bureaus resigned en masse. Hence, both credit bureaus were suspended for 3 months during Q2 2003 and clarification sought from the Credit Information Protection Committee (the entity that has the authority to control and monitor credit information business under the Credit Information Business Act). Representatives from the World Bank, the US Consumer Data Industry Association (CDIA) and US credit bureau experts met up with Thai officials and conducted a series of roundtable discussions to share the US and international experiences on credit bureaus. In June 2003, both credit bureaus re-opened for business.

Post-merger, the challenge for the bureau is to capture consistent, clean and integrated information. Since many contributing banks are new to this exercise, much effort is required to clean data capture. Once this phase is over, the Thailand bureau can think of industry bureau scoring solution to take it to the next level. In Thailand post currency crisis, the economy has picked up significantly; however, in 2004, the economic growth slowed partly as a result of drought, avian flu and rising oil prices to a rather strong 6.1 percent. Since Thailand is among the growth economies in Asia, in many ways it is like China, India and Indonesia. Many young consumers are becoming affluent and getting hooked to consumerism and organized lending. If proper care is not taken and the financial institutions fail to do prudent lending, a plastic bubble similar to what happened to Korea may be expected.

4-3.   SME Development and Credit Information Systems in ASEAN

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[40] NCB is the product of the merger of two bureaus that were started in 2003 by the Thai Bankers Association (focused on firms) and by the Government housing Bank (focused on individuals), respectively (Menkhoff and Suwanaporn (2007))

4-3-1　The Problem of Credit Demand and Supply in ASEAN

SMEs have been touted as the fundamental factor influencing the levels of output, employment and income growth in the ASEAN region. They account for a sizable component of the total number of businesses in ASEAN economies and employ a significant number of the labor force.

Table 4-5: Size of SME in ASEAN5 and Selected East Asian Countries

Country	SME as % of All Firms	SME as % of Workforce
ASEAN-5		
Indonesia	98	88
Malaysia	84	32.5*
Philippines	99	99
Singapore	90	44
Thailand	96	76*
East Asia		
China	99	75
Japan	99.7	69.5
South Korea	99.2	75.3
Note: *Manufacturing sector only		
Primary Source: Profile of SMEs and SME Issues in APEC 1990-2000; ASEAN Policy Blueprint; Malaysian Economic Report 2003/4; information from fieldwork survey; various country reports.		

However, the contribution of SMEs in ASEAN to the macroeconomic production has not reached a level that is at par with SMEs in the developed world. For example, the value added of SME in Singapore is "only 24% of the economy's total value added and 16% export earnings." In Thailand, SME's total output contribution is "below 40% of GDP." In manufacturing, ASEAN SMEs contribute only between 20% and 30% to gross sales value and only between 10% and 20% to export earnings. These figures pale in comparison to the EU's 50% contribution to total value added and to the 40%-50% manufacturing output contribution in Japan, Korea and China (RAM Consultancy Services (2005)). This wide discrepancy in SME contribution indicates the presence of apparent challenges SMEs face which constrict them from further realizing their potential to contribute economic value. Foremost among these challenges is the access to

financing.

In 2005, a study involving a survey of ASEAN financial institutions revealed that many lending institutions would actually want to lend to SMEs especially as they realize that on a portfolio basis, SME loans provide higher returns and lower risks compared to corporate loans. However, these lending institutions are prevented from doing so either by the regulatory framework or by the SMEs themselves. The study found that the existing legal and regulatory frameworks in most ASEAN economies are not providing the right infrastructure to support and facilitate formal sector lending to SMEs. The gap in the ability of SMEs to generate significant economic value and the existing framework that supports them indicates that although SMEs are large enough to be regulated, they are "not large enough to enjoy the benefits reaped by large enterprises." The reasons for this gap are attributed to: (a) the lack of protection for creditors and enforcement of collateral rights; (b) the lack of fiscal incentives for small enterprises; (c) strict prudential regulations which restrict ability of banks; (d) unduly complex and onerous administrative procedures; and (e) lack of a consistent definition or enabling law for SME (RAM Consultancy Services (2005)).

It is often claimed that SMEs play strategic roles in terms of providing inter-firm linkages to support large companies, but the dualistic nature of most ASEAN countries' remain tilted in favor of big industrial enterprises and prevents these SMEs from graduating into large companies. The table below summarizes the problems emanating from both the demand and supply side of credit and how these continue to challenge SME development in the ASEAN region.

Table 4-6: Demand and Supply Side Constraints in SME financing

Demand Constraints	*Supply Constraints*
- Banks' insistence on collateral; - Lengthy and tedious loan processing - Stringent documentation requirements - Complicated loan application procedures (many SMEs are not formally educated not have the resources to help them with bank procedures) - High interest rates - Inability to prepare required business plan - Lack of knowledge about available financial assistance schemes Banks tend to treat small businesses as they would large business borrowers by exacting the same	Public sector constraints: *Crowding out by government.* Government involvement and intervention appear to crowd out more efficient private sector financing firms which could lower the total credit available to SME Private banking sector constraints: *Collateral requirements.* Banks' collateral requirements are difficult for SMES because not only are banks' valuation methods conservative, but SMEs also lack supplementary financing channels.

degree of due diligence and standards of compliance. It looks like the banking sector will remain the major source of external financing for SMEs in the future. In this regard, banks must examine their internal structures and processes to treat SME as distinct business entities if they are to benefit from the sector's potential	*Weak credit skill and practices*. Most banks are so focused on financing large corporations that they lack training, knowledge and the necessary skills required to manage SMEs.
	At its most basic level, the commercial banking sector is lacking considerable experience even in mobilizing savings effectively let alone have the skills required for credit risk assessment, adequately pricing risky investments and assets and monitoring corporate performance.
	Cumbersome loan processing and documentation. SMES are required to produce a business plan which is costly and cumbersome to prepare, and then they are asked to wait for weeks to several months for the loan approval.
	Legacy of high NPLs. This has weakened banks' capitalization levels and limits overall capacity to lend, and coupled with weak economic sentiments in the past few years, this has created an air of risk-adversity among financial institutions.
	Structural constraints:
	SME definition. The definition of SME varies widely among ASEAN countries and within each country, differs between financial and other lending institutions.
	Lack of depth of financing resources. Alternative sources of financing are not yet sufficiently developed in ASEAN region.
	Lack of information on SME. For transition economies in the ASEAN, there is a lack of centralized and comprehensive information database on SME.
	Weak savings mobilization in transition economies.
	Over-banked situation. Without sufficient resources and economies of scale, the private sector may be unable to introduce any significant and widespread lending programs to effectively meet the requirements of SMEs.

Source: RAM Consultancy Services. 2005. SME Access to Financing: Addressing the Supply Side of SME Financing

4-3-2 Sources of SME Financing in ASEAN

The SMEs in ASEAN may potentially have various sources of finance. The

following puts some discussion on the present perspectives of the sources to illustrate the roles of the credit information database and new financial technologies.

SME financing via Government Programs. These constitute direct intervention by the government in the form of grants, tax breaks, holidays, the creation of dedicated financial institutions and various business development services to enhance SME competitiveness and skill levels. Studies reveal that these measures have not been as successful as originally intended, given the low level of penetration in formal financing (less than 20%) and the low contribution to value added (20-30%). Moreover, it has been argued that "these intervention measures have produced negative externalities such as crowding out of private sector banks and the emergence of a dependency syndrome, all of which are alleged to have more than offset the massive subsidies and resources the government have committed to the SME sector" (RAM Consultancy Services. 2005). However, there are some success stories as well. One such is Singapore's Start-Up Enterprise Development Scheme (SEEDS) that encourages private sector investments in innovative start-ups through matched equity financing by the government. In the Philippines, financing channeled through state-owned and private lending institutions have met much higher repayment rates.

Guarantee schemes, which have been in operation for many years in some Asian economies (such as Malaysia, Philippines, Singapore, Korea and Thailand), are important means to facilitate access to financing to viable SMEs without adequate collateral. In the case of interest subsidy and credit guarantee schemes, the government either provides the subsidy or guarantee to SME loans made by private banking institutions (as practices in Malaysia, Philippines and Thailand) or the SME loan is insured by private credit insurers but the risk premium is co-shared between SME and the government (as practiced in Singapore). The common experience is that these guarantee schemes enjoy limited success in many developing economies.[41]

Export financing schemes (long practiced in Indonesia, Malaysia and the Philippines) have likewise been met with limited success. This is because most SMEs are not capable of exporting yet, and the schemes are usually administered by state-owned banks which lack commercial credit experience (resulting in misallocation of funds to non-viable businesses), are less efficient (resulting to long processing time), and/or adopt commercial banking principles for lending to SME (resulting in low approval rates). In

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[41] Despite this, it has been argued that public money spent for supporting credit guarantee schemes is a very efficient instrument and has a much higher multiplying effect than other instruments: 1:30 compared to 1:2 for venture capital funds.

the case of the Philippines, loan quotas have been successful, as the mandatory loan quota of 8% imposed on by government on banks is fairly well subscribed. Development financial institutions have played only a minor financing role with the exception of the SME Bank of Thailand, a dedicated state-owned SME bank with nearly 12,000 customers in 2004[42].

Banking Sector Financing. Despite the low penetration rate, financing by banks is the most important source of external financing for SMEs. This is due primarily to the dominance of banks as the main intermediary in the formal financial systems in ASEAN countries (see Chapter 1). The banking sector in ASEAN5 has a wide range of generic short, medium and, to a lesser extent, long term credit and various supplementary financing instruments including trade credit, exports financing, factoring and discounting. Some banks also provide special loans targeted at priority sectors and key segments of the population as identified by the government. For banks with SME lending units, lending is guided by the official Decree/Act (such as in Thailand and the Philippines) or by certain government agencies (such as in Indonesia, Malaysia and Singapore).

Commercial banks deploy a variety of financing facilities and instruments for SMEs. These include term loan, trade financing, revolving loans and overdrafts, factoring and leasing. The first three are most popular in ASEAN5. Financial markets in ASEAN5 are sufficiently well developed to mobilize medium to long term funds, hence nearly 70% of financing instruments in Malaysia are medium to long term, while in Indonesia, over 75% are medium term instruments. More than the inherent bias against SME financing, the ability of SMEs to access long or short term funds is dictated by the risk preference of individual banks and the existing banking structure. Banks in the ASEAN5 (except

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[42] The Small Industrial Finance Corporation (SIFC), the forerunner of the SME Bank, was started in 1992 as a state-owned financial institution under the Ministries of Finance and Industry. It is responsible for the promotion and development of Thai SME and as the main funding arm of the Thai government for SME. It offers low interest financing for business expansion and joint ventures, consultancy services and supports the SMEs with venture capital fund. It is also the government's policy-loan vehicle for loans to energy saving projects, SME entitled to ISO standards, research and development projects and in the promotion of particular sectors. In December 2002, the SIFC was re-established as the SME Bank of Thailand with the passing of the SME Development Bank of Thailand Act to offer SME full financial services. Its mandates are " to conduct business with the aim to develop, promote, and assist SME in the establishment, operation, expansion, or improvement of their businesses through the provision of loans, guarantees, venture capital, counseling and other necessary services as prescribed by the Act." It defines SME as one having between 15 and 200 employees and an asset value of between BHT30 million and BHT200 million. It operates under both the Ministry of Finance and the Ministry of Industrial Development, provides loans between BHT500K and NHT100 million, and has 80 branches in 2004. Due to the need to follow Government instructions to lend at low interest rates to SMEs, its profit margin is less than the commercial banks. There is also the additional expense of developing and guiding the entrepreneur, due to its status as a policy-based institution. In 2004, the default rate of SME loans registered 26%. The SME Bank if Thailand has nearly 11,700 SME customers in 2004.

Singapore) generally prefer manufacturing and trading and are averse to real estate related sectors. On average, SME loans constituted between 15-52% of total loans in 2004: banks in Malaysia and Thailand had a consistent portfolio of about 40% SME loans vis-à-vis total loans while in the Philippines, it is about 60%. Among the most common problems cited by banks in connection with SME lending are (a) lack of collateral, (b) lack of bankable business plan, (c) lack of experience, (d) poor financials, (e) lack of track record of firm or owner, (f) bad credit record and (g) lack of information on SME. Some commercial banks also admit to not having enough expertise that could appropriately deal with SME financing needs.

The perception that SMEs are higher in risk is due to their lack of capital, lack of skills, lack of professionalism, poor transparency and limited market access. On the other hand, the main reason that some other banks treat SME as lower risk is due to the diversification and risk lowering effect of a large number of small SME loans in the portfolio (the risk of small numbers). This is especially so since SME loans are usually secured loans. In 2004, on the average, 85% of SME loans throughout ASEAN were secured. Considering that on the average only 71% of all loans were secured, this indicates that banks were less willing to lend to SME compared to larger firms on a clean basis. The most common form of collateral is plant and property, followed by home mortgage pledged by the entrepreneur. This underscores a strong need for the development of credit information system for SMEs.

The loan appraisal process for SMEs relies on a variety of information sources, including informal checking with other banks as a means of verification. It is in this stage that the utility of a credit information system comes to the fore. In some ASEAN countries, there are central databases maintained wither by official or private information providers, which lenders can consult. These financial information database influence the rate of accuracy, reliability, ease and cost of processing loan applications.

Capital markets. Shifting the level of dependence from banks to capital markets has long been the ideal in ASEAN regional finance, especially since there seem to be a chronic lack of long-term credit to SME. Given the onerous legal, regulatory and administrative requirements on firms targeting the capital markets, the lack of support from investment community and the generally nascent capital markets in ASEAN with significant imperfections (e.g., high transaction costs, lack of liquidity, and depth of instruments), this move has many challenging hurdles from an implementation aspect. Though not as advanced as developed markets in terms of depth and liquidity, there are equity markets in the ASEAN5 that are used for sounding SME funds. Small-cap equity

markets exists in Thailand (MAI) and Malaysia (Second Board of Bursa Malaysia and MESDAQ) to address the needs of medium-sized and start-up/high technology enterprises respectively. However, these two exchanges are still evolving, and their growth have been fairly constrained by weak financial market sentiments, tightening of listing requirements and lack of quality companies intending to list on the bourse.

Despite the theoretical and academic appeal of bond market financing, the reality is that ASEAN bond markets are **not yet** a viable avenue for SME financing. Given the relatively high transaction administrative costs, the appetite for high grade bonds (resulting in higher premiums for lower rated bonds), and the general reticence of SME to 'open up' their books to agency scrutiny, the bond market will remain the domain of large and strong corporations in the future. On plausible option to tap into capital markets without being hampered by the challenges is securitization of SME loans, assuming the existence of a viable bond market. Singapore has been exploring this option with the launching of the Loan Securitization Scheme for SME in January 2005. Through securitization, SME loans are packaged into tradable bonds that offer competitive yields and sold to institutional investors. The government will effectively take on the first-loss risk. It is hoped that not only will this scheme pave the way for SME to tap into the capital market, but also provide alternative financing for SME which do not qualify for existing loan schemes[43].

Although the bond market is currently out of reach for most SMEs, there is a potential to tap into it via the securitization programs. Lenders with sufficiently large SME portfolios could issue asset-backed securities against their SME loans. This will free up funds in these institutions for further lending to the section. Another option would be to establish a national securitization entity to purchase SME loans from banks for resale in the bond market. It must be noted that the problem of lack of SME funding may only be addressed via securitization if the bond market is sufficiently developed and banks are willing to channel funds back to the SME sector. In the meantime, Asian bond markets have to be made accessible to smaller companies.

Venture capital. These schemes are available in a number of Asian countries. An example is the US$1 billion fund was set up to attract high technology companies under the Entrepreneurship21 program (T21) in Singapore and the Venture Capital Association in Thailand. However, this financing modality generally suffers from a poor track record in developing countries due principally to lack of viable exit routes for the

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[43] SMEs targeted for this scheme are those with little or no track record or collateral as well as those seeking small loan amounts or requiring loans to venture abroad.

venture capitalist who typically look at investments that yield a minimum of 30% return per annum. In Thailand, only 26 of the 700 companies that applied for venture capital funds were successful and these were due in part to the stringent requirements of venture capitalists, lack of innovative ideas and weak marketing techniques for end-products.

Trade financing. This takes the form of trade credit, equipment leasing and factoring. This solves the informational opacity problem that many banks face with SMEs and may be valuable tools in countries with weak lending infrastructures. In the case of factoring, it might help SME expand, improve credit ratings and achieve some internal cost savings. Another important aspect of trade financing is that it tends to be countercyclical which could be useful in times of distress and credit crunch in the banking sector.

Informal sector financing. This segment (comprising lending between family, friends, savings and credit associations and moneylenders) is the main channel of credit in Cambodia, Lao PDR, Myanmar and Vietnam. In ASEAN5, the banks are becoming the main channels of external financing while friends and family are still the preferred choice of funding from the informal sector.

4-3-3　The Impact of Financial Access on SME Development

The access to credit and business information is very important for SMEs. Financial providers rely on this information to assess the creditworthiness of potential borrowers, price loans and manage their portfolio. In ASEAN, credit providers rely on a variety of sources to verify information, even in countries where central credit bureaus exist. This seems to suggest that there is ample room for improving the availability, reliability and accuracy of credit databases in the ASEAN region. What is interesting to note is that most governments in the region have taken to establishing or overhauling their credit information database for SMEs. Generally, the equity and venture capital markets in ASEAN are not sufficiently developed to allow SMEs of all sizes to access these potential viable sources of long term funds. A strong institutional and regulatory framework for capital market development and greater promotion of venture capital are required to further encourage growth of equity financing.

Most ASEAN5 economies have relatively sufficient and adequate institutional support for SME operations. The legal framework covering bankruptcy, registration of land and regulations on accounting, taxation and banking are well in place. Singapore's legal framework is one of the most efficient in the world; Thailand has various laws

specifically for the interest of SMEs; Malaysia's government has been generally been supportive of creating an SME-friendly environment and more initiatives have been introduced to support this segment.

How does limited access to financing impact on SMEs? Although banks serve the SMEs through a variety of financing tools and instruments, many SMEs are constrained in terms of access to long term funds, and by virtue of size, they have less flexibility and bargaining power to negotiate competitive interest rates for their loans. The shortage of financing and poor implementation of funding programs could impair SME competitiveness in terms of their ability to capitalize on business opportunities. SMEs require working capital and investment funds to sustain financing and expand capacity. Without adequate formal financing options, SMEs are forced to depend on internally generated profits and retained earnings that take time to accumulate. Because of credit constraints, SMEs' operational expansion plans are compromised. The inability to expand production capacity results in missed opportunities that in turn limit the rate at which SME firms can grow. Continued reliance in informal financing is too costly for working capital and longer term investment needs. This in turn inhibits firm growth and further delays much needed income and employment generation.

4-3-4   Credit Bureau and SME Development

The institutional reach and impact of the formal financial sector to the SMEs could be deepened by improving the credit evaluation methodologies and skills of bank officers, giving due consideration to the fact that SMEs are different in structure and nature from traditional large companies and hence have their own unique financial needs. SME units could be established especially in commercial banks manned with specially trained officers. Data-driven evaluation techniques such as credit scoring may improve SME access to formal finance. In addition, banks should optimize their "relationship" with the SME clients by extracting all necessary information while explaining to their SME-clients the efficiency, relevance and practicality of submitting quality data to their creditor institutions.

From a legal and regulatory standpoint, it would certainly help if the definition of SME could be standardized to facilitate better planning and mapping of the needs and performance of this sector. Information about SMEs must be made available and access to such information must be established through the SME-centered government agencies and SME credit bureaus. The current paucity of reliable data on the SME sector is stifling

a number of initiatives, which could have propelled SMEs to greater production and income levels. Information sharing of SME data could definitely help in commissioning more studies and research in order to provide a better understanding of this sector's potential. For banks that target SME financing needs, the government could provide them with incentives to help actively promote SME financing. Given the fact that the informal lending sector is another major source of SME financing, informal debt workout mechanisms for SME financing could be further enhanced with the creation of a legal intermediary between debtor SME firms and creditors in the informal sector.

4-4. Issues in Credit Information System within the ASEAN

4-4-1 Issues in Credit Information Systems within the ASEAN

Earlier chapters in this paper have highlighted the benefits of establishing credit bureaus. Moving forward, the region could benefit from having a shared credit information infrastructure that could accelerate the pace at which ASEAN member countries are forging ties. What are the salient considerations in creating a credit information system that is envisioned to be a shared platform among ASEAN member countries? If a credit information database were created in the region, which entities would be in charge of data collection, information processing and system maintenance? What level of involvement would it require from the legal and regulatory authorities in each member country?

Jappelli and Pagano (2005) identify several issues in the architecture of credit information systems. The first is the *relationship between private and public credit information systems*. In Chapter 2, a thorough discussion was made on the essential differences between a public and a private information sharing mechanism. The existence of both types of systems may not necessarily be socially optimal, especially if a public credit registry ends up crowding out the private credit bureaus. The minimum reporting threshold for a public system is crucial since it effectively delimits the areas in which private facilities can operate. The higher the threshold for public systems, the greater is the scope for private credit bureaus. This is a consideration for the ASEAN where some countries have either only public credit registry, private credit bureaus or are just on their way to having a credit bureau.

The second issue is the *dosage of negative and positive information*. The generation of negative data or black lists is the simplest, inexpensive and most effective in

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enforcing discipline among borrowers via the reputational mechanism, but the inclusion of positive information must also be practiced, especially in the light of credit bureaus reputation as institutional intruders to privacy.

The third concerns the *memory of the system* or the number of years the system is set to remember a default incident. In a system with infinite memory, defaulters have no chance to exit from being on the black list and deter their participation in the credit market. On the other hand, when the system has a very short memory, the disciplinary mechanism loses its grip. There must be a trade-off between the need to discipline borrowers and the need to give them a second chance. In the case of the Belgian Central Office for Credit to Private Individuals, only default information on household debt is kept. If arrears are paid, the information is automatically removed after one year; if the debt is repaid after default, it is removed only after 2 years. This system also does not keep any record for more than 10 years.

The fourth is the *danger of creating a monopoly or oligopoly* in private information sharing which could impact on the degree of market competition and surplus enjoyed by consumers. However, information sharing among banks has never been a concern of competition authorities as governments often mandate information sharing as a way to enhance, rather than curtail, competition in the financial sector. It is important to remember this does not rule out the possibility that even information-sharing arrangements in the financial sector may be designed to stifle competition. Information sharing may also be more difficult to mandate in markets where the private credit bureaus are integrated with the banks themselves. This allows banks to use the bureau as a collective entry prevention device against potential entrants in the market. This suggests that credit bureaus should be open-access, so that any actual or potential lender can access the same information at non-discriminatory costs. A very low threshold level for public credit registry may also be set in order to encourage more competition among private bureaus.

The fifth is *pooling information across company groups and countries* – a credit information system must provide overall indebtedness of each debtor. This is challenged by the difficulty of assessing the overall indebtedness of consolidated firms linked by complex structures and cross-shareholding arrangements. A multinational company structure compounds the problems, but even when it borrows directly from a foreign bank, its debt may go unreported to the domestic private credit bureaus. This issue may be addressed by direct entry into foreign markets or via alliance with foreign credit bureaus. However, integration of system interface may be costly or impossible. For example, in

Europe where the public credit registries are quite old, it is difficult for the member countries to agree on a common set of rules so that the danger of their displacement by private multinational bureaus is increasing. Countries that are just establishing a PCR for the first time have the opportunity of designing them to ensure compatibility with the systems of their main commercial partners.

The sixth is the issue of *privacy protection,* which regulates to a certain extent the types of activities credit bureaus may engage in. Privacy laws affect a wide range of consumer guarantees, such as limits on access to files by potential consumers, bans on white information, compulsory elimination by individual files after a set time, bans on gathering certain kinds of information, and the right to access, check and correct one's own file. Divulging certain types of sensitive information may cause borrowers to be too cautious and reduce risk-taking and entrepreneurship below the socially desirable level. Entitling individuals with the right to inspect and correct mistaken information about them not only improves the quality of information but also help correct the negative bias in reporting that credit bureaus are often blamed for. In Malaysia, for example, strict rules apply to the use and access of information kept in the private bureau to protect the confidentiality of borrower's information. The Credit Bureau may only supply a credit report to the financial institution where the loan application was made. Financial institutions, in turn, are prohibited from disclosing the information on their borrowers to any party.

In the case of establishing information sharing systems in developing countries, it must be considered that the role of informal lending cannot be discounted. This implies that credit bureaus in these areas are unable to capture the vast wealth of transaction information that occurs in the informal lending market. A possible remedy to this would be to allow informal lenders such as NGOs to access public credit registries. This could be started at the microfinance level. Credit bureaus in developing countries may usefully start with proving black information and later on enrich their dataset to include additional corporate account and management information. Literature has indicated that private credit registries are particularly useful in countries where creditor rights receive poor protection and the law is less effectively enforced. Ultimately the availability of information provided by both public and private bureaus can induce banks to shift their lending policies from a collateral-based lending policy to a data-driven one.

4-4-2 ASEAN Credit Information Sharing System: Necessary Infrastructure[44]

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[44] Beck(2003)

Problems identified at credit registries in South Asia suggest what may be encountered in ASEAN members. The socio-economic differences between the two regions' countries aside, the problems may be of reference in that the South Asian registries have been in operation somewhat longer than the ASEAN registries, but nevertheless confront these challenges. The problems requiring attention were:

1. **Obtaining data of greater accuracy; obtaining data more frequently** (In one case, lack of computers at banks prevented prompt supply of data.)

2. **Improvement of IT infrastructure and ensuring data confidentiality and security** (In one case, technical skills at the central bank had to be improved in order that new software   for reduction of processing time could be utilized.)

3. **Expansion of consumer awareness** (Diffusion of knowledge regarding credit reports being essential for enabling individuals and businesses to safeguard their rights.)

4. **Introduction of new products and new business solutions** such as use of cell phones for basic reporting by microfinance institutions.

5. **Allowing and encouraging private ownership** (Provided that the legal basis for this exists.)

To varying degrees, these problems are present in the ASEAN region, but more specifically, the criticism has been made that "Information from these registers is typically limited by the high threshold and selective sectoral focus, thus leaving the middle-market segment, including SME lending, and various sources of consumer finance to [private-sector' credit bureaus."[45] The same observer indicates that the private registries are more oriented toward consumer credit than commercial lending – a situation found in other countries a

Providers and users of credit data.   These include commercial banks and other regulated financial institutions such as credit card companies, insurance firms, car finance companies, mortgage houses/lenders/guarantors; retailers, firms providing business-to-business and trade credits, microfinance institutions and other companies which provide goods and services on credit such as utilities companies, telecommunications firms, agribusiness firms, etc. These providers and users of credit data constitute the barometer of the financial market infrastructure. The information they

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[45] *Wattanapruttipaisan, op. cit., p. 91.*

submit could indicate the level of concentration or competition within the banking/financial market. By analyzing the various financial products offered, regulatory authorities would be able to assess the breadth of lending that occurs within the economy as well as the depth of reach of banking products and services. It could also identify the changing role of the non-bank sources of finance and niche credit areas that call for new types of credit services.

Institutional arrangements for credit registries. There are pros and cons to having credit registry of a particular institutional type. Private bureaus with no bank ownership have the advantage of data independence; however there is no automatic access to data. Those with bank ownership have special access to bank data but because of its alliance with the bank, its independence may be questioned. Bank associations have access to bank data and have the integrity advantage but its data access is limited only to bank data. Chambers of commerce has the advantage of a broad data coverage including retail and no-bank data, but it has no bank data and its funds to modernize are usually limited. Commercial and credit insurance firms has in-depth data on the commercial sector but suffers from limited coverage. Industry-specific databases have in-depth data on a specific industry but have limited scope.

Quality of data collected. It should contain both negative and positive information and must be maintained for a reasonable amount of time, say 5 years. Credit reports should not include sensitive personal information to prevent discriminatory segmentation based on religious or political affiliation. Even gender information should be treated carefully.

Quality of data distributed. Integrity and transparency of data of utmost importance. An open system is preferable, and whereas access to more detailed information is preferable, restrictions must corollarily be enforced to prevent "cherry picking".

Legal framework. It should encourage information sharing among lenders by providing clear definitions on what are considered as legally acceptable information sharing practices. Privacy policy must be clearly established, but privacy protection laws must be given due consideration in view of the fact that it could limit credit reporting. Borrowers should have access to their own data. Records must be kept of who has accessed the credit registry data as part of a report. Consumer-friendly procedures must be in place to challenge erroneous information within a reasonable time frame. The competition policy aspects of credit information must also be considered.

Regulatory framework for credit reporting. Regulatory framework is usually weaker than legal framework in many developing countries. It must effectively enforce laws and regulations via audits, lawsuits, fines and reviewing codes of conduct. It must also equip consumers of credit bureau data with the ability to bring their complaints outside of the judicial system which tends to be weakly enforced in most developing countries.

Use of credit information for bank supervision. Supervisors monitor financial institution's use of credit information as part of on- and off-site inspections. They also use PCR data to identify large problem borrowers, to fine tune regulations and in analytical work to identify risk categories of borrowers. They can require publicly owned financial institutions to provide data to legitimate credit reporting firms and associations, and encourage all financial institutions to participate in credit reporting and data sharing.

Consumer outreach and education. There must be readily available information on managing credit and on the rights and responsibilities of borrowers regarding credit reporting. Outreach programs must be prepared to cater to lenders on the importance of credit information. Outreach must be made to other interested parties. In Singapore, the MAS embarked on an ambitious, long term education campaign called MoneySense, which was designed to help consumers make better financial decisions, especially those who are vulnerable to aggressive marketing tactics and do not possess sufficient financial knowledge and skills.

4-4-3   Key Features of Credit Information Systems

Legal framework. The legal environment should not impede and, ideally should provide the framework for the creation and operation of effective credit information systems. Libel and similar laws have the potential of chilling good faith reporting by credit information systems. While the accuracy of information is an important value, credit information systems should be afforded legal protection sufficient to encourage their activities without eliminating incentives to maintain high levels of accuracy.

Operations. Permissible uses of information from credit information systems should be clearly circumscribed, especially regarding information about individuals. Measures should be employed to safeguard information contained in the credit information system. Incentives should exist to maintain the integrity of the database. The legal system should create incentives for credit information services to collect and

maintain a broad range of information on a significant part of the population.

Public policy. Legal controls on the type of information collected and distributed by credit information systems can be used to advance public policies.   It may likewise be used to combat certain types of societal discrimination, such as discrimination based on gender, race, national origin, marital status, political affiliation, or union membership. There may be public policy reasons to restrict the ability of credit information services to report negative information beyond a certain period of time, e.g., 5 or 7 years.

Privacy.   Subjects of information in credit information systems should be made aware of the existence of such systems and, in particular, should be notified when information from such systems is used to make adverse decisions about them.   Subjects of information in credit information systems should be able to access information maintained in the credit information service about them.   They should be able to dispute inaccurate or incomplete information and mechanisms should exist to have such disputes investigated and have errors corrected.

Enforcement/Supervision.   One benefit of the establishment of a credit information system is to permit regulators to assess an institution's risk exposure, thus giving the institution the tools and incentives to do it itself.   Enforcement systems should provide efficient, inexpensive, transparent and predictable methods for resolving disputes concerning the operation of credit information systems.   Both judicial and non-judicial enforcement methods should be considered.   Sanctions for violations of laws regulating credit information systems should be sufficiently stringent to encourage compliance but not so stringent as to discourage operations of such systems.

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Conclusion and Policy Recommendations

Implication of the Study

Information Asymmetry in Finance and its Implication to SME Finance

The theories of the information suggest that the financial firms would tend to become intermediaries (banks). However, the availability of financial information, including the agency problem and transaction costs, still affects the banks. The banks suffer from the problems of information particularly in lending to Small- and Medium-sized Enterprises (SMEs) and lending in developing countries. Diverse lending technologies are employed by the banks for reaching different types of clients, especially where clients do not have conventional collateral or where collection of collateral is not secure. While it has been conventional practice to distinguish between (i) transactions lending, based primarily on ''hard'' quantitative data, such as a credible set of borrower financial accounts, or secured on assets, and (ii) relationship lending, based significantly on ''soft'' qualitative information, in practice the menu is much broader (World Bank (2007)).

The relationship lending tends to be costly for the lender, and as such requires either high spreads or large volumes to be viable. If the customer's creditworthiness is hard to evaluate, then there may be no alternative to relationship lending. And in a sense relationship lending is at the core of banking business, and is where banks continue to have a comparative advantage over markets and non-bank financial institutions, even in developed countries. Indeed, limited access to credit in some difficult environments may be attributable to the reluctance of existing intermediaries to do relationship lending on a small scale. For lenders willing to put in the effort, relationship lending can, however, be profitable. Other lending techniques, such as leasing, factoring and export finance, have not been often used in developing countries, potentially reflecting the shortcomings of the underlying legal, information and institutional environment.

Throughout the East Asia, the SMEs far outnumber the larger enterprises, and their contribution to employees is dominant. In large, SMEs are owned and operated by the founder's family, where the ownership and management are not clearly separated. While the SMEs in Japan obtain access to credit allocation from the local banks and financial cooperatives, those in developing countries in East Asia generally not. The financial information of the SMEs in these countries is too limited to judge the status of

operation, and their governance structure is often unclear. The SMEs often disclose no information. The relationship banking in the developing countries are too costly for the banks without the scale merits, and the lack of the financial information makes the banks' transaction lending too risky. As a result, the largest problem that SMEs face is the difficulty in accessing to finance from the market. Their access to credit often is limited to informal financial institutions and internal finance, e.g. lending from relatives and friends.

Credit Registries/Bureaus and Recent Development of New Lending Techniques

Collection and management of credit information in a database is performed by what are most commonly called credit information registries or bureaus. Distinguish is sometimes made between "credit bureaus" (information brokers) and "public credit registries" (usually managed by the central bank, with mandatory participation by a narrower range of financial institutions). They may be either public or private, and a country may have both a public registry and one or more private registries. Credit registries and credit bureaus are an important tool for the expansion of transactions based lending technologies. Credit bureaus and registries are one of the mechanisms for sharing information about potential borrowers. According to some definition, they are the "information brokers, which operate on the principle of reciprocity, collecting, filling and distributing the information supplied voluntarily by their members."

The recent development of information pooling and sharing technologies applied to the debt financing, including the SME financing. One of the most important technologies is the use of models for credit scoring. These models are used both by individual banks and by credit registries that serve a larger segment of the financial community (or bank regulators). Credit registries are important for their use of this technology, in a way that contributes to financial activities in various ways, including the scoring the SME lending.

Implications

Public or private credit information bureaus / registries are primarily used for making commercial and personal loan decisions, managing existing loan portfolios, and at the same time for use in oversight and provisioning of the banking sector. The creation of such bureaus / registries will improve the financial market functioning in the ASEAN plus three. This is especially true for the lending to SMEs. High ratios of East Asian household sector assets in "savings and deposits" suggests that banks will continue to be

major lenders of funds, hence there is a strong argument in favor of establishing and strengthening public credit bureaus in ASEAN, with compulsory or voluntary memberships by enough types of financial institution to cover at least as high a percentage of total lending as in Japan when Japan's high-growth period began.

Some of the private credit bureaus / registries in the United States have been engaged in East Asia. The experience of other countries strongly suggests that the establishment of credit bureaus / registries would facilitate the lending, promote the competition among lenders, and reduce the financial evaluation costs, those often leading to lower interest rates. Public credit registries may serve the financial authorities to supervise the banking sector, and contribute to the stability of the financial systems. The private and public registries may work as complements each other.

In addition, the experience of Japan on the SME credit information database would be useful. The unique mix of semi-public, semi-private organization in Japan may provide a pragmatic model in the construction of credit information, particularly in the economic, administrative and political context in East Asia. The scoring model technologies, which the organization possesses an advantage on, and the service derived from them are the essential activities in the organization to sustain. As the scale is the key for these databases, regional cooperation would be desirable to harmonize, exchange and integrate such databases, including those for SME landings, in the future. If combined with securitization technologies, the bank lending to SMEs may be bind as securities. Good rating and scoring of the lending claims would serve as essential infrastructure for such securitization.

At the same time, especially to the larger enterprises and multi-national corporations in East Asia, improvement of credit ratings has an important implication as a means of promoting development of a bond market. Credit rating agencies in the ASEAN countries are relatively new and relatively weak. Guiding their growth and development to ensure advantages from their functioning requires nation-by-nation attention to the requisites for achieving the advantages, but there also is a modest regional organization of CRAs, that deserves assistance for organizational development and capacity building, as it can both assist members and work toward regional coordination and cooperation.

Policy Recommendations

The Policy Recommendations made in this report include the followings text. They cover the development of credit bureau / registry in ASEAN, creation of SME credit

information database, and regional cooperation to develop regional information sharing in East Asia.

(1) Development of Credit Bureau / Registry in ASEAN

While establishment of credit bureau /registry will lead to expand lending and stability of financial systems in general, the diversity of the economic and cultural characteristics of countries in the ASEAN multiplies the challenges that accompany the difficult task of creating a system in their countries. Some countries like Indonesia, Singapore, Malaysia and Thailand have already started to incorporate the functionalities of a credit bureau into their credit architecture. Other countries like the Philippines and Viet Nam are slowly gearing up to move towards this same direction despite being beset by problems such as good data capture and the legal-regulatory structure to effectively monitor credit bureau activities.

The key features to establish the working credit information database, identified here, are: to create and upgrade legal framework, to ensure safeguard of information in operation of the database, to establish public policy control to avoid misuse and abuse the database, to secure privacy protection, and to achieve good supervision for violation of regulations. Private and public registries appear to work as complements each other, but the public registries should not crowd out the private.

(2) Creation of SME Credit Information Database

Creating an SME credit bureau is one direct answer to the information asymmetry challenges. The successful experience of Credit Risk Database (CRD) of Japan may be applicable to ASEAN countries. While public sector would need to subsidize the initial investment for computer system and to pay other fixed costs, the database can operate privately. The challenges experienced by the CRD include the data collection with overcoming the free-rider problem, strict code of conduct to maintain the data security, development of the technique to encrypt the borrowers profiles, and provision of services of value to the customers who contribute the data. Development of well-performing scoring models would be essential services to be provided to the customers as a reward.

Further feasibility study is required to identify the issues to apply the system to the developing countries in ASEAN and other regions. Among all, careful consideration is required on the selection of items in the financial document to be collected;

management frameworks, particularly the ownership (private or public, or mix of them) and government intervention; collection of data (voluntary or mandatory). It is also carefully considered that the initial fixed costs, which are normally sunk costs, for establishing the computerized system can be financially justified compared against the merits of the database in the ASEAN developing countries. The selection of items may have an important implication on creating regional information sharing system in ASEAN plus three. Generally, the requirement should be the minimum, reflecting the diversity of the ASEAN countries. But, key items should be included such as the profiles of the borrowers and basic items in profits and loss and balance sheet documents.

(3) Regional Cooperation to Develop Regional Information Sharing in East Asia

Financial markets in ASEAN will remain fragmented and its development will move at an individual-country pace if no serious efforts are established to harmonize credit and financial practices. The establishment of a regional information sharing system will empower financial institutions to grow and perform at a rate that would complement existing programs to develop the region's SME sector and Asian bond markets. An ASEAN credit information sharing infrastructure would eventually propel the region's SME firms to a paradigm of securitization and, possibly, capital market access for financing further growth.

From a regional standpoint, holding annual regional financial forum involving all stakeholders in the SME sector would provide the necessary opportunities to exchange information, views, and programs and invite dialogue towards the establishment of an SME information database in each country with the view of eventually creating a regional SME information exchange hub.

This would necessitate a regional SME definition to enable the formulation of regional policies and initiatives for ASEAN SMEs. To encourage financial institutions to maintain an SME database, the creation of a common reporting framework for SMEs is suggested. This is to ensure consistency and accurate presentation of SME data to banks, government and other institutions. Not only will this serve as an initiative to move forward with a regional SME information database framework, it would likewise promote information consciousness and reporting discipline among SMEs.

Issues to be Further Studied

This report contains the literature survey, field and document researches on the credit information database in ASEAN plus three countries, as well as the United States and EU, and policy recommendations. In light of the wide range of issues to be explored in this field, we have identified several items for further research. First, the present perspectives of the credit registries / bureaus in ASEAN should be further examined. Their costs, both private and public, to set up the system would be the key issue. As is true in the United States and Europe, the history of development in credit registries / bureaus is considerably diverse in East Asia. Examining their country-specific roles would help indentifying the good practice applicable to other countries in East Asia.

As described above, a credit information database for SMEs would be further scrutinized on the institutional framework, financial requirement, and legal framework both for a country and region. Some more country case studies will merit the study, in particular in Korea and some other ASEAN countries.

Finally, the regional cooperation mechanism to create a harmonized information sharing system, especially for SME lending, should be further considered so as to maximize the benefits of the information database in the region. This initiative would contribute to the development of Asian Bond Initiative. The ASEAN plus Three Financial Ministers Meeting process provides an effective regional forum for this issue.